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For Thirty-five YEARS, commencing *Anno* 1715, ending 1749.

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Aſtra regunt Homines, ſed regit Aſtra Deus.

By *CHARLES LEADBETTER*,
Teacher of the MATHEMATICKS.

The SECOND EDITION, with ADDITIONS.

O come hither and behold the Works of the Lord, &c. Pſ. 46. 8.
I thank thee, O Father, Lord of Heaven and Earth, that thou haſt hid theſe things from the Wiſe and Prudent, and haſt revealed them unto Babes; even ſo Father, for ſo it ſeemed good in thy ſight. St. Mat. 11, 25, 26. St. Luke 10. 21.

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WELLCOME
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TO THE
Sons of URANIA.

AS *there is no part of the* Mathematicks *ſo noble and excellent as* Aſtronomy ; *ſo there is no part of* Aſtronomy *ſo difficult as the Doctrine of Eclipſes, eſpecially when the Calculation of* Solar Eclipſes *is limited and determined to a certain Longitude and Latitude, in regard of the tedious computation of the* Moon's *Parallax in Longitude and Latitude; upon which the* Solar Eclipſes *principally depends.*

This piece of Learning is the very ſuperſtructure and punctilio of Aſtronomy. *And ſo rare it is to be found amongſt Men, that not One of Twenty-thouſand hath attained to it; it is the very Crown and higheſt pitch (and may juſtly Challenge to it ſelf the Soveraignty and Precedency) of all humane Learning whatſoever. 'Tis not only Speculative (for the Ignorant) and Contemplative (for the Ingenious) but alſo Predictive, (becauſe it tells us as well what* Eclipſes *is paſt, as what's to come.) Is there any Art or Science under Heaven (except* Aſtronomy) *that can tell me whether there will be any* Eclipſe *of the Luminaries in* Auguſt, *in the Year* 1816. *or (I might have ſaid)* 7816. *(ſuppoſing the World to continue ſo long)? Can either Philoſophy, Phyſick, or Logick do't? No, it's impoſſible; and yet an* Aſtronomer *can reſolve the Queſtion in half an hour. But to return.*

1. Eclipſes *of the* Luminaries *are twofold, viz.* Solar *and* Lunar. *The* Solar *is cauſed by the interpoſition of the* Moon, *between the* Sun *and* Earth ; *whereby ſome particular Tract of the* Earth *is deprived of the* Sun's

Light during the Eclipſe; *at which time other Places of the World, have the full Light of the* Sun.

2. *The* Lunar Eclipſes *are Univerſal, and appears in all Places of the ſame quantity and duration: For the* Moon *being an Opacous Body, and having no Light but what ſhe receives from the* Sun, *can never be Eclipſed or looſe the* Sun's *Light, but at the Full* Moon, *when ſhe hath little or no Latitude, and Diametrically oppoſite to the* Sun, *and the* Earth *interpoſing between them* (recta in linea) *caſting her Shadow upon the* Moon, *and thereby depriving her of the* Sun's *Light, which may be more or leſs, according to the* Moon's *Latitude.*

Now it is to be obſerved, that in the Solar Eclipſes, *the* Moon *by her proper Motion in Longitude (from Weſt to Eaſt) firſt enters upon the Weſt Limb of the* Sun; *ſo that the* Sun's *Eclipſe doth always begin on the Weſt-ſide, and end on the Eaſt. But the contrary appears in the* Lunar *Eclipſes, for her Motion (as I ſaid before) being from Weſt to Eaſt, the Eaſt part of her Body muſt neceſſarily firſt enter the Earth's ſhadow; and ſo her Eclipſe always begins on the Eaſt-ſide, and ends on the Weſt. The* Sun *is very ſeldom, but the* Moon *often totally Eclipſed. And the Eclipſe of the* Moon *appears from all Parts alike, as to quantity and duration, and a Reduction for the difference of* Meridians *will ſhew the beginning, middle and end of any ſuch* Lunar Eclipſe *for any determinate Place on the Earth. But in Eclipſes of the* Sun *it is not ſo, being at the ſame Moment of time leſs in one Place than another, in one Part of the Earth Total, in another Part thereof no Eclipſe at all; which is all cauſed by the* Moon's *vicinity to the Earth, and ſudden Changes of her Parallax in Longitude and Latitude. An inſtance of which we had in* 1715. *in the great and viſible* Eclipſe *of the* Sun; *whereas at* Leverpool *in* Lancaſhire, *they had a ſmall Tract of Light on the upper part of the* Sun's *Body; in all the Middle parts of* England *it was Total; at* Paris *in* France, *they had the lower part of the* Sun's *Body enlightened; all which*

Appearances are cauſed by the Moon's *Parallax above-mentioned.*

But to return to my Task in hand: The enſuing Treatiſe, which I have entituled, A Treatiſe of Eclipſes, *is a Calculation* de novo, *wherein I have ſpared neither Time nor Pains to make the Work ſerviceable not only to the Ingenious, but alſo to the Ignorant; for having but this ſmall Tract about you, you may in a Minute tell any one how many* Eclipſes *will be in any Year to* 1741. *with the juſt time and quantity of each: All which I have Calculated for the Meridian of the famous City of* London.

Whether or no I have had great Pains in its Calculations, either in the Eclipſes, *or* Conjunctions, *he ſhall only know, that ſhall attempt to do the like. I have Typified all that will be viſible at* London, *at the middle time of ſuch* Eclipſe, *and when the* Luminary *happens to Riſe or Set* Eclipſed, *you will ſee there by a particular Type how much of the* Luminary *is then obſcured: And if any one ask why I did not put the Minutes to the Cuſps of the Houſes, in the annexed Schemes; I anſwer, that the Degrees alone are ſufficient in a Work of this Nature. Now my only aim in this Treatiſe, is to inſtruct the Ignorant, who either loves, or deſires to be taught the Knowledge of theſe things; to whom I wiſh all proſperous Succeſs in this and all other honeſt Endeavours; and for whoſe Sakes I confeſs my ſelf to remain a Servant to all the true Lovers of Art.*

Charles Leadbetter.

Upon my Ingenious and much Hon^d *Friend Mr.* Charles *L*eadbetter *his* Treatiſe of Eclipſes.

GReat *Cronton*'s Glory! oh, that I could raiſe
A Monument might magnifie thy Praiſe;
But that s an *Herculean* Task, yet thine
Own Works have done it, thus thy Praiſes ſhine
Beſt from thy own Atchievements; but leſt I
Shadow thy Praiſe, with my obſcurity,
I will be Silent; Let who will aſpire
To ſpeak thy Praiſe, I rather will admire
Thy matchleſs Arts; that makes thee ſoar ſo high
To know the Language of the ſpankled Sky:
You can reſolve before we need to ask
When *Sol* puts on pale *Luna*'s ſhady Mask,
You tell us of Extremes, both Cold and Hot,
And when the *Moon* will wear a beauty Spot;
Obſerv'ſt their order, what News there thou hears,
Thou tell us all the Wonders of the Spheres;
Thy boundleſs Skill, with ſuch unmated Glory
Hath Crown'd thy Name, that it's a living Story,
Of thy great Worth, which may be well enroll'd
Not into Paper, but rich Leaves of Gold.

George Nickolls, Philom.

---

* In *Lancaſhire*, the Author's Native Place.

Carmen Acroſticon in laudem Authoris.

COuld I but Write, as well as thou haſt done
Here the Eclipſes *both of* Moon *and* Sun,
And tell as well when Jove *conjoyn'd will be*
Riſing or Setting with ſwift Mercury ;
Lying in Combuſt or in Luna's *way,*
Entering his Manſion houſe, or when aſtray,
Should be the only Work I would diſplay.
Let all be Silent then, and hear him tell
Every Conjunction, *be they ill or well ;*
Admire then, the Planets *conſtant Race,*
Do only view their Figure and their Place ;
By which you may be able to foreſee,
Every Punctilio of this Myſtery ;
Th' admired Ruſtick *ſure at this will fancy,*
That theſe Predictions are from Nigromancy :
Exquiſitely he ſhews here by his Pen,
Rare News of the Creator's Will to Men.

W. Parr, Amator ſtudiorum.

ERRATA.

WHat Errors have eſcaped the Preſs, the Reader is deſired to Correct as follows.

Pag. 2. lin. 11. for 13 deg. r. 43 deg. lin. 30. for *Honageſſima* r. *Nonageſſima* deg. ♈. p. 3. l. 15. r. *Nonageſſima* deg. ♈. pag. 4. above the Type read

		m.	*s.*	
Lat. ☽ ſeen at	Beginning	0	3	North Aſcending.
	End	2	31	

And in the Type of the *Sun*'s Eclipſe, *April* 22. 1715. the Rays of the *Sun* ought not to appear in the *Moon*'s Body above. In the Scheme, p. 5. houſe 11. for ☊ 20 40. r. ☋ 20 40. and on the Cuſp of the 2d, for ☊ r. ♌. p. 8 in the Scheme before the Cuſp of the 2d. r. ☊ 10, and on the Cuſp 2d r. ♏ 16. and ſtrike out ♈. on the Cuſp 3d. r. ♐ 11. before the Cuſp 4th. read ♂ 18. and in the ſame houſe ſtrike out ♓ 25. on the Cuſp 4th. r. ♑ 22. and on the Cuſp 5. r. ♓ 25. and ſtrike out 81 ☿ and ♐ 11. on the Cuſp of the 8th r. ♉ 16. and before the ſame Cuſp r. ☋ 10. p. 9. in the Type, the two Stars A and B ought to touch the ☽, and l. 29. for ♉ 16 *m.* 10 *s.* r. ♉ 16 deg. 10 m. p. 15. l. 27. r. Time of Incidence or half duration 1 *h.* 54 *m.* 32 *s.* and l. 29. r. 48 *m.* 33 *s.* p. 19. in Scheme in the Cuſp 6 houſe, for ♏ 5 r. ♍ 5. and in the 5th houſe ſtrike out ⊕ 5 44 29. p. 20. l. 20. for *a Night* r. *at Night.* p. 21. in the Scheme, for ☋ 20 in the 11th houſe, r. ☊ 20. p. 24. l. 24. for *continuation* r. *continuance.* p. 25. l. 9. for *one* r. *none*, and in the Scheme houſe 1 for ♌ r. ☊, and in the 7 houſe for ♃ r. ♄. p. 28. in Scheme Cuſp 10. for 28 r. 23 deg. and houſe 7. r. ☽. p. 30. l. 13. r. a ſquare of ♃ ♂. p. 31. l. 22. for *falling* read *following* true ☌. p. 32. l. 9. r. *Sun*'s place ♊ 1 deg. 41 m. 21 s. and l. 15. r. *Declination Culminating Point North*; and l. 20. for 18 *m.* 48 *s.* r. 18 *m.* 49 *s.* p. 40. in the Aſcendant r. ♃ 21 R P. 41. l. 3. for 53 *s.* r. 55 *s.* and in the Scheme r. ♄ direct. P. 43. in the Scheme r. ☊ ♓ and ☋ ♍. P. 44. in the Scheme r. ☊ ♓ and ☋ ♍. In the Scheme p. 58. ſtrike out ♄ of the 7th houſe. P. 59. in the Year 1734. read both of the *Sun* inviſible; and for 1733. read 1735. p. 62. l. 27. read Total Duration 3 *h.* 29 *m.* 36 *s.* P. 68. l. 13. read *Altitude Nonageſſima* deg. 54 deg. 35 min. and line 14. for 28 read 26. P. 77. line 3. for *Middle or greateſt darkneſs* r. *True Ecliptick* ☍. and l. 4. for *True Ecliptick* ☍. read *Middle or greateſt darkneſs.*

A Treatiſe of Eclipſes.

Of the ECLIPSES *this Year,* 1715.

FOUR Times to the Inhabitants of this Terraqueous Globe, will the two great Luminaries ſuffer Eclipſe, twice the Sun, and as often the Moon; only two conſpicuous to the Inhabitants of *Great-Britain*; they happen in the following Order.

The firſt is a Great and Total Eclipſe of the Sun, on *Friday*, the 22d. Day of *April*, (it being *Alchurch* New Fair-day) at 9 a-Clock in the Morning; a Synopſis of the Calculation follows.

The Meridian of *London*, *April*, 1715

	D.	H.	M.	S.
Equal Time of true ☌	21	21	22	5
Sun's true place ♉		12	14	24
Orbite place ☾ ♉		12	14	24
Mean Anomaly ☉	10	2	55	42
Mean Anomaly ☾	6	19	32	57
North Node ſubtract	7	20	40	10
Argument Latitude	5	21	34	14
Moon's Latitude North Deſcending			43	55
Reduction add			1	53
Ecliptick place Moon ♉		12	16	17
Hourly Motion ☾ *a* ☉			35	26
Horizontal Parallax ☾ *a* ☉		1	0	4
Time of Reduction ſubtract			3	10
True Ecliptick ☌	21	21	18	54
Equation of Time add			9	50
Apparent Time at *London*	21	21	28	44
Difference Meridians ſubtract			8	40
Apparent Time at *Alchurch*	21	21	20	44

	D.	H.	M.	S.
Sun's true place ♉		12	14	17
Right Aſcenſion of the Sun		39	47	21
Apparent time *a* Noon in Deg. & Min.		320	11	0
Right Aſcenſion Medium Cœli		359	58	21
Complement			1	39
Medium Cœli in Ecliptick ♓		29	56	21
Declination Medium Cœli South			1	23
Meridian Angle		66	30	0
Altitude Equator at *Alchurch*		37	35	0
Altitude Medium Cœli		37	33	37
Altitude Nonageſſima deg.		43	22	3
Diſtance Medium Cœli *a* Nonageſſima		27	24	29
Nonageſſima degree in ♈		27	21	0
Diſtance Sun *a* Nonageſſima degree		14	53	17
Parallax ☾ *a* ☉ in Longitude			10	36
Parallax ☾ *a* ☉ in Latitude			43	40
To 1 Hour before true ☌ *viz.*	21	20	20	44
Sun's true Place ♉		12	11	52
Right Aſcenſion of the Sun		39	44	57
Apparent Time *a* Noon in Degree		305	11	0
Right Aſcenſion Medium Cœli		344	55	57
Complement		15	4	3
Medium Cœli in Ecliptick ♓		13	38	24
Declination Medium Cœli South		6	26	54
Altitude Equator at *Alchurch*		37	35	0
Altitude Medium Cœli		31	8	6
Meridian Angle		67	21	47
Altitude Nonageſſima Degree		37	49	6
Diſtance Medium Cœli *a* Nonageſſima		32	30	58
Nonageſſima Degree ♈		16	9	22
Diſtance Sun *a* Nonageſſima Degree		26	2	54
Horizontal Parallax ☾ *a* ☉		1	0	4
Parallax ☾ *a* ☉ Longitude			16	10
Parallax ☾ *a* ☉ Latitude			47	27
Hourly Motion ☾ *a* ☉			35	26
Different Parallax Longitude ſubtract			5	34
Viſible Hour Motion ☾ *a* ☉			29	52
Interval of true and viſible Conjunction ſubtract			21	18
Apparent Time viſible ☌	21	20	59	26

Sun's

	D.	H.	M.	S.
Sun's true Place ♉		12	13	24
Ecliptick Place ☾ ♉		12	0	37
Diſtance ⊙ and ☾			12	47
Right Aſcenſion Sun		39	46	4
Apparent Time *a* Noon		314	51	30
Right Aſcenſion Medium Cœli		354	37	34
Complement		5	22	26
Medium Cœli in Ecliptick ♓		24	8	36
Declination Medium Cœli South		2	19	51
Altitude Equator at *Alchurch*		37	35	0
Altitude Medium Cœli at *Alchurch*		35	15	9
Meridian Angle		66	56	33
Altitude Nonageſſima Degree		41	27	9
Diſtance Medium Cœli *a* Nonageſſima		29	19	21
Nonageſſima Degree ♈		23	27	57
Diſtance Sun *a* Nonageſſima		18	45	27
Horizontal Parallax ☾ *a* ⊙		1	0	5
Parallax ☾ *a* ⊙ Longitude			12	47
Parallax ☾ *a* ⊙ Latitude			45	2
☾ True Latitude North Deſcending			45	23
Viſible Latitude ☾ North Deſcending			0	21
Semidiameter Sun			16	8
Semidiameter Moon			16	37
Sum Semidiameter of the ☾ & ⊙			32	45
Viſible Latitude ſubtract			0	21
Reſt of the Parts deficient			32	24
Digits Eclipſed			12	3
Scruples of Incidence			32	45
Time of Incidence		1	4	24
Time of Repletion		1	8	24
Total Darkneſs			1	58
Continuation of the Eclipſe		2	12	48

Hence	H.	M.	S.	
Beginning	7	55	2	in the Morn.
Beginning of Total Darkneſs	8	58	27	
Greateſt Obſcuration	8	59	26	
End of Total Darkneſs	9	0	25	
End of Eclipſe	10	7	50	

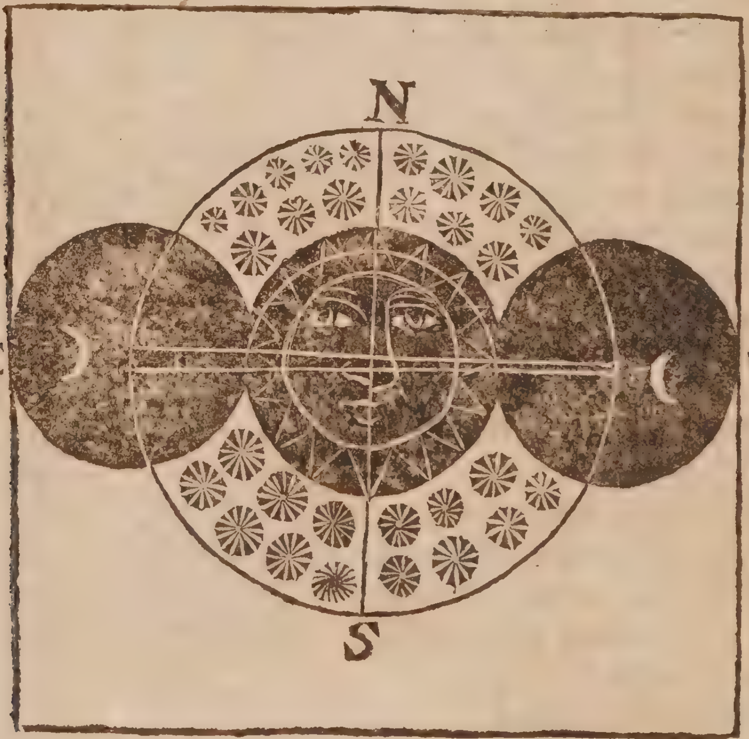
At *Alchurch*, *Friday*, *April* 22, 1715. But the Time at *London* is thus:

Hence the apparent Time at *London* of the

	D.	H.	M.	S.	
Beginning *April*	21	20	2	13	P.M
Middle	21	21	7	32	
Viſible Conjunction	21	21	7	42	
End of the Eclipſe	21	22	16	31	
Total Duration		2	14	18	
Digits Eclipſed are		11	47	0	

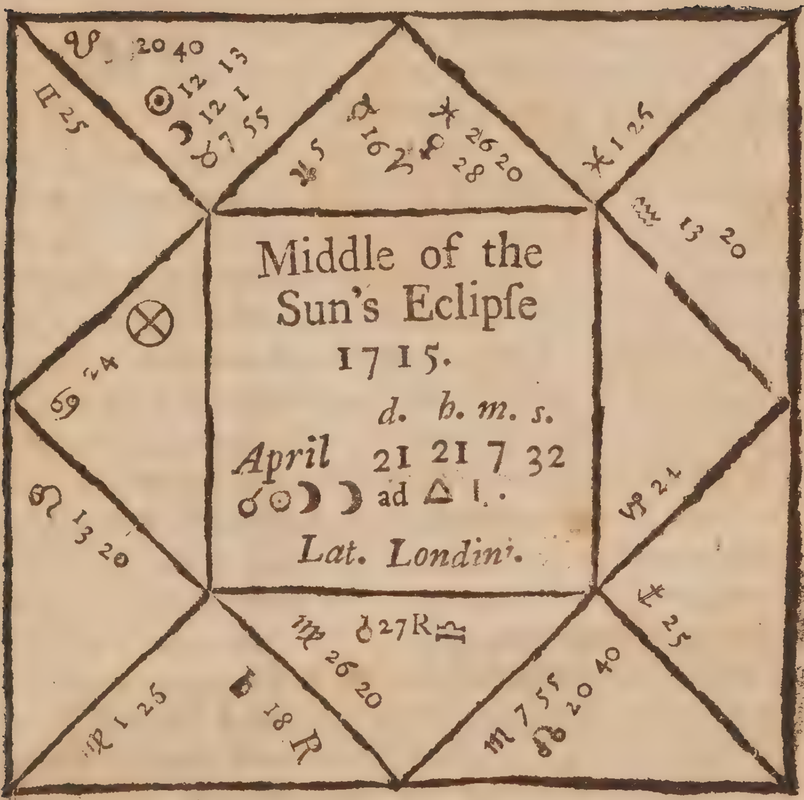
at ☽ soon at
(Beginning - - - - - - - 0′ 3″ } N.A
(End - - - - - - - - - - 2″ 31 }

The Type.



At the middle Time of this Eclipſe it will be ſo dark, that the Stars may be ſeen, to the great Aſtoniſhment of many People: Three of the Primary Planets will be ſeen Weſtward of the Sun; firſt *Jupiter*, next the *Sun*, then *Mercury*, and laſtly *Venus*; which two laſt are near the Meridian, and *Jupiter* near the Cuſp of the 11th Houſe; the 7 Stars, *Aldebrand* and *Orion* may all be ſeen toward the *Eaſt*; all which you may more plainly perceive by the Face of Heaven itſelf at the middle of the Eclipſe, and Latitude of *London*.

This



This Eclipſe happeneth in the 11th Houſe of Heaven, which ſignifies Loſs of Friends, and Fruſtration of Hopes; and being in the Earthy Triplicity, and *Ireland*s Aſcendant, it foreſhews the Deſtruction of the Fruits of the Earth, and Scarcity of Corn and Fruit, and a Danger of a Raging Peſtilence in thoſe Places under ♉ and ♏; Froſt, thick and foggy Weather, unwholſome Air, Baniſhment, Poverty, Miſery, Death of great Cattle, and a Mortality of Old People; it ſtirs up Malice, Strife and Debate, and many Tedious Law-Suits; the Effects hereof will continue (according to the Rule of Aſtrology) until the 10th Day of *July*, *Anno* 1717.

This is the greateſt Eclipſe of the Sun that has happen'd in *England* ſince the Year 1652, which happen'd on *Monday* the 29th Day of *March*, about 10 in the Forenoon, which to this Day is called *Dark Monday*, that it was no where in *England* ſo great as this is;

for this Eclipſe will be total, for about two Minutes of Time, in all the middle Counties of *England*; but at *Cronton* in *Lancaſhire* (my Native Place) they will have a Thread of Light on the upper Side of the Sun's Body, and we at *London* will ſee the ſame Appearance on the lower Side of his Body; this is a moſt unuſual Appearance, and is well worth all Ingenious Men's Obſervations. I had done the Calculations of this Glorious *Phænomena* long before it happen'd, for *Edinburgh*, in *Scotland*, where they had near two Digits of Light on the North, or Upper Side; for *Leverpool* in *Lancaſhire*, where they had near one Digit of Light on the Upper Side; for *Alchurch* in *Worceſter-ſhire*, where 'twas total; for *London*, where it appeared as in this Type; for *Paris* in *France*, where they had two Digits of Light on the Lower, or South Side of the Sun's Body. All which Calculations and Types I ſhewed to ſeveral Ingenious Gentlemen, which gave great Satisfaction; I alſo provided myſelf with good Inſtruments againſt the Day for the obſerving of it, which I did at *London* with great Diligence and Nicety, and found the Beginning, Middle and End, and Digits dark, to appear as in the Calculation above. The Morning was very ſerene, and continued ſo all Day, ſo that we had a very good Opportunity of taking our Obſervations to the greateſt Nicety imaginable. In the middle of the Eclipſe the Air became ſo cold, (on a ſudden) that it ſtruck a Terror on all the Spectators, (eſpecially on the vulgar Sort.) But as the Light increaſed, the Cold vaniſhed, 'till the Morning return'd to its former Heat and Luſtre. One of the Gentlemen that ſaw my Performance hereof, was ſo well pleaſed therewith, that in the Afternoon the ſame Day he made me a very handſome Preſent; for which I return him my hearty Thanks; and I think it had been a great Ingratitude in me if I had not mentioned thus much of it in this Place.

The ſecond will be an Inviſible Eclipſe of the leſſer Luminary the Moon, on the 7th Day of *May*, a Quarter paſt 12 at Noon, it will not be ſeen in any Part of

Europe, but our *Antipodes* will behold it near the Meridian, and 6 Digits, 25 Minutes of the Moon's Body on the South Side will be obſcured. It falls in 26 Degrees of ♏, and in the 4th Houſe of Heaven; but becauſe this Eclipſe will not be ſeen in *England*, I ſhall not ſay any Thing on the Effects thereof.

The Third will be an Inviſible Eclipſe of the Sun, on *Saturday* the 16th Day of *October*, 6 Minutes paſt 9 a-Clock in the Morning; and if the Air be clear at that Time, it will not be ſeen in any Part of *Great-Britain*, by Reaſon of the Moon's great South Latitude, which being augmented by her Parallax of Latitude, depreſſeth the Moon below the Sun's Limb, which plainly proves it cannot be ſeen at *London*; but in the more Southern Parts of the World it will be ſeen.

The Fourth and Laſt Eclipſe is of the Moon, and viſible, on *Monday* the 31ſt. Day of *October*, in the Morning, according to the following Calculation.

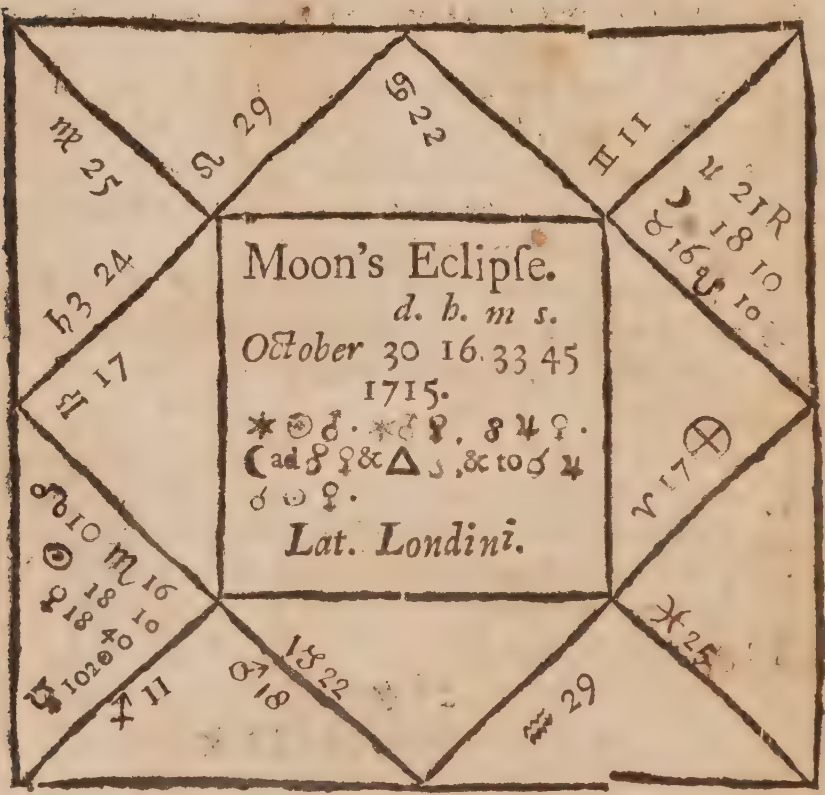
Hence the apparent Time at *London* of the

	D.	H.	M.	S.	
Beginning is *October*	30	15	14	48	P. M.
Greateſt darkneſs		16	33	45	
Middle or true Ecliptic ☍		16	39	32	
End of the Eclipſe		17	52	48	
Total duration		2	38	0	
Digits Eclipſed		7	49	0	

The Type.

This Eclipſe falls in 18 degrees of *Taurus*, within 6 degrees of the great Eclipſe of the Sun before-mentioned,

oned, which aggravates the Miſchiefs there threatned; *Hermes* tells us, that when both the Lights are Eclipſed in one Month, as they are here, there ſhall then be many Troubles happen in the World, and eſpecially in ſuch Places where there is a particular Signification of them. *Aphoriſm* 53. and at the middle time of this Eclipſe, the Heavens will be poſited thus.



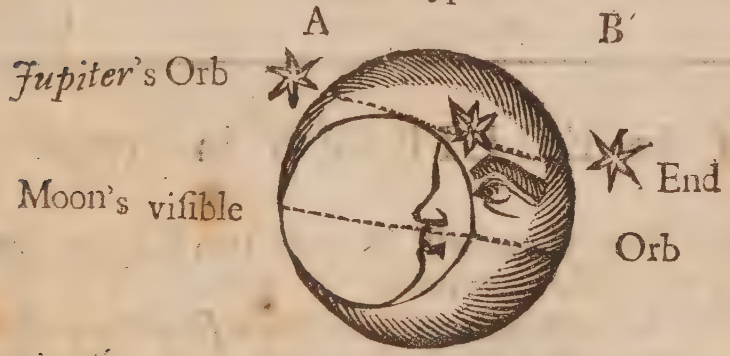
This Eclipſe falls in the 8th Houſe of Heaven, in conjunction with *Jupiter* Retrograde, and in Oppoſition to *Venus*, in the ſecond Houſe; this ſhews the death of ſome great Lady, as alſo Miſchief to the vulgar People, marry'd Women, and Travellers.

Beſides theſe 4 Luminary Eclipſes, there will be a moſt Glorious *Phænomena*, or an Eclipſe of the Planet *Jupiter*, cauſed by the Interpoſition of the Moon's Body between him and our Sight, on the 24th day of *December*, in the Evening, according to the following Calculation.

Hence

		H.	M.	S	
Hence the apparent Time at *London* of the	Beginning 1715, *Dec.* 24	8	33		P.M.
	Viſible ☌	8	54	16	
	End	9	15	10	
	Total duration		41	48	

The Type.



At the time of this Conjunction the Moon is very near the point of her *Perigæon*, her Motion is now very ſwift, and her Diameter great; the Moon is 10 days old, and conſequently if the Air be clear will ſhine very bright; at 55 Minutes paſt 7 at Night ſhe is in the Meridian or full South, and then you will ſee that Star a little to the left; and at 33 *m.* 22 *s.* paſt 8 at night the Moon will appear to touch the Star, as at *A*, and in a very ſhort Spacee of time you will ſee the Star quite cover'd, which will continue ſo for the Space of 41 *m.* 48 *s.* and at 15 *m.* 10 *s.* paſt 9 at night, the Moon will leave the Star to the Right, and they will appear as at *B* in the Type above. I have not met with any Author that has given any Account of the effects of the Eclipſes of the Planets, which I think there is more Reaſon for, than there is for the Eclipſe of the Luminaries, becauſe ſuch Appearances happen but ſeldom, and if you pleaſe to give me leave, I will give you a Word or two of my Opinion of it. Firſt then, *Jupiter* ſignifies the Clergy, and the Moon the common People, the Sign this unuſual Appearance falls in is ♉ 16° ... 10. the Aſcendant of *Ireland*, and the Planet *Jupiter* at this time is Retrograde, this falls in the ſame Sign, and within a few degrees of the two viſible Eclipſes beforemention'd, mention'd; now you know a threefold Cord is not eaſily broke, theſe things all put together look with a ver ſowcr face upon *Ireland*, &c. as if the Clergy there woul be forced to play at Bo-peep, and leave their Religiou Houſes for their Conſcience-ſake; ſo I ſhall leave all fo time to determine, and conclude my Account of the Eclipſes for this Year 1715.

Of the ECLIPSES in 1716.

IN this Year there will be only two Eclipſes, and both of the Sun, inviſible.

The firſt Eclipſe happeneth on *Wedneſday* the 11th of *April*, 19 *m.* paſt 2 in the Morning, in 2° of the Cæleſtial Bull, the Sun at that time is under the Earth, proves the Eclipſe inviſible at *London*.

The Second Eclipſe this Year is alſo of the Sun, and falls on *Thurſday* the 4th day of *October*, at 32 *m.* paſt 10 a-Clock in the Forenoon, and if the Air be clear at that time it will not be ſeen at *London*, by reaſon of the Moon's South Latitude which is at that time 2 deg. 13 *m.* *S. D.* this happeneth in 22 deg. of the Cæleſtial Ballance; and becauſe theſe Eclipſes are both inviſible in *England*, I ſhall not trouble my ſelf nor the Reader with any Account of their effects. On the 24th day of *November* this Year there happeneth a famous ☌ of the two Infortunes *Saturn* and *Mars* in 18 deg. of *Libra*; they are then Morning-Stars.

Of the ECLIPSES in 1717.

FOUR times this Year will the two great Lights of Heaven come within the Ecliptick Boundaries; twice the Sun, and as often the Moon; they happen in the following Order.

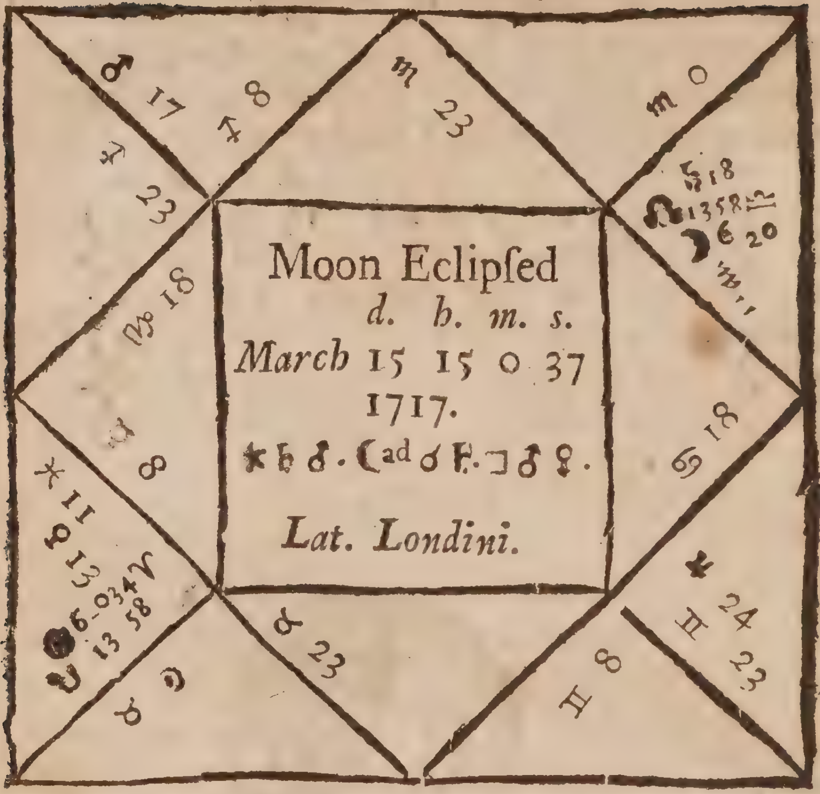
The firſt will be an Eclipſe of the Moon, and viſible on *Saturday* the 16th day of *March* in the Morning, according to the following Calculation.

Hence the apparent Time at *London* of the

	d.	h.	m.	s.	
Begin. is 1717, *March*	15	13	43	37	P. M.
True Ecliptick ☍		14	54	9	
Middle, or great darkneſs		15	0	37	
End of the Eclipſe		16	17	37	
Total duration		2	34	0	
Digits Eclipſed		6	31	0	

The Type.

This Eclipſe falls in 6 deg. ♎, and in the 8th Houſe of Heaven, and Authors tell us, that it ſignifies a ſickly Air, and that Corn will be dear, with Tempeſts of Hail, and Rain; danger to Woman in Child-bed, and the Application of ☽ to ♄ in the 8th, ſhews the death of many aged People.



The ſecond is an inviſible Eclipſe of the Sun, on *Sunday* the 31ſt day of *March* at 3 a-Clock in the Afternoon; but not to be ſeen in *England*, by reaſon of the Moon's great South Latitude 44 *m.* 17 *s.* which being augmented by her Parallax of Latitude, proves it cannot be ſeen in theſe Northern parts of the World.

The third Eclipſe happeneth oe *Monday* the 9th day of *September*, and is of the Moon, the Beginning whereof will not be ſeen at *London*, but the middle and end, will be ſeen here as is proved by the following Calculation.

Hence the apparent time at *London* of the

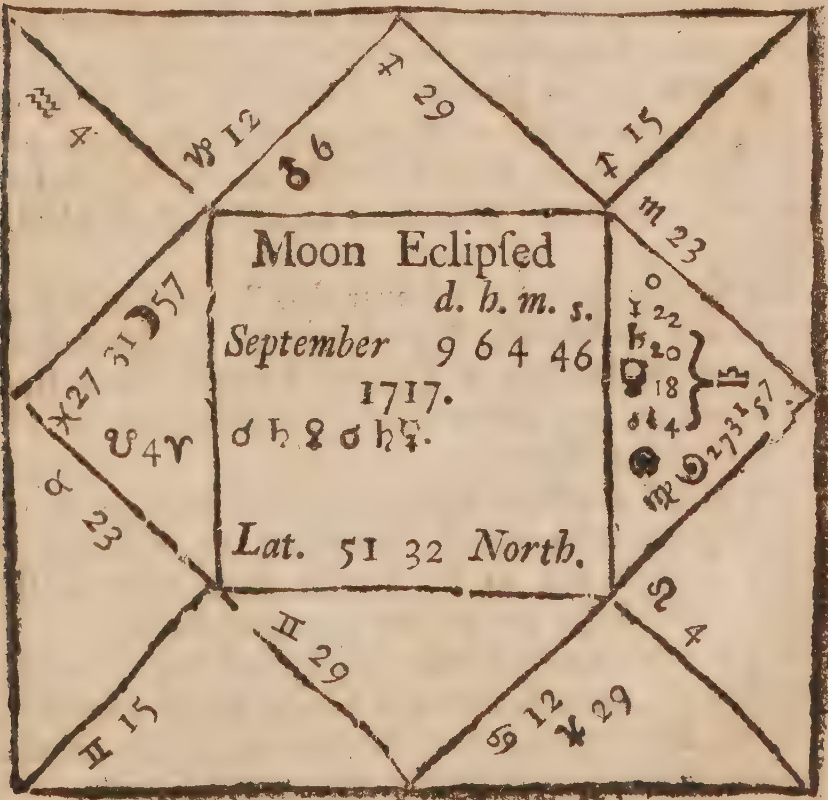
	d.	*h.*	*m.*	*s.*	
Beginning is 1717, *Sept.*	9	4	42	18	P. M.
True Ecliptick ☍		5	58	23	
Middle or greateſt darkneſs		6	4	46	
End of the Eclipſe		7	27	14	
Total duration		2	44	56	
Digits Eclipſed are		7°	0	0	

This

The Type.

The Moon riſeth nearly thus.

This Eclipſe is made in 27° of ♓, and falls in the 12th Houſe of Heaven; this ſignifies Sedition, Cruel and Inhumane Actions of Soldiers, Sea-Fights and death of Fiſh, great Floods of Water, death of vulgar People; and being in the 12th Houſe, it foreſhews Sorrow and Impriſonment to the common ſort of People, and the death of great Cattle, as Oxen, Horſes, Hogs, *&c.* the Places under the Eclipſed Sign, are *Portugal*, *Galicia*, *Cilicia*, *Ægypt the higher*, *Normandy*, &c. Cities, *Alexandria*, *Worms*, &c. the Face of Heaven at that time will be thus.



This Eclipſe begins in the firſt Houſe of Heaven, and ends in the 11th; if the Air be clear that night you will ſee the Moon riſe Eclipſed, nearly as the Type above ſheweth; for ſhe riſeth at *London* that night 3 *m.* 46 *s.* before the greateſt darkneſs, at which time (nearly) the Sun ſets.

The fourth and laſt is an Eclipſe of the greater Light of Heaven the Sun, on *Monday* the 23d. day of *September*, at 50 *m.* paſt 6 at night; the Sun is ſet e'er the Eclipſe begins, ſo not viſible in *England*; but in the Weſtern Parts of the World it will be ſeen, and will be very great to thoſe that ſail on the Weſtern Ocean.

Of the ECLIPSES *in* 1718.

SIX times this Year will the two Luminaries come within the Ecliptic Boundaries; four times the Sun, and twice the Moon, only one of the Moon part viſible; they happen in the following Order.

The firſt is an Inviſible Eclipſe of the Sun, on *Wedneſday* the 19th of *February*, half an hour paſt 6 in the Morning, it will be ſeen in the North-Eaſt parts of the World. It is made in 11° of the Cœleſtial Fiſh.

The Second will be a Lunar defect, on *Wedneſday* the 5th day of *March*, at 3 a-Clock in the Afternoon, and ſo not to be ſeen at *London*, becauſe the Eclipſe endeth before the Moon riſeth; it happeneth in 26° of the Cœleſtial Virgin.

The Third is a Solar Deliquium, and happeneth on *Thurſday* the 20th day of *March*, at 11 a-Clock at Night and ſo not to be ſeen in theſe parts of the World. It falls in 11° of the Heavenly Ram.

The Fourth is alſo a Solar defect, and will be on the 15th day of *Auguſt*, at one a Clock in the Morning, it being *Friday*, and the Aſſumption of the Bleſſed Virgin; it will not be ſeen in any part of *Europe*.

The Fifth is a total and part viſible Eclipſe of the Moon, on *Friday* the 29th day of *Auguſt*, in the Afternoon, according to the following Calculation.

	D.	H.	M.	S.
Eq. time of true ☍ at *London*, *Aug.*	29	7	59	38
Mean Anomaly Sun	2	10	43	27
Mean Anomaly Moon		9	56	6
Place of the Sun from the Earth	♍	16	37	35
Place of the Moon in her Orbit	♓	16	37	35
North Node ſubtract	♍	15	46	56
Argument Latitude	6	0	50	39
True Latitude Moon South Aſcending			4	24
Reduction ſubtract				12
Time of Reduction add				26
Correct time of true ☍ at *Lond. Aug.*	29	8	0	4
Equation of time ſubtract			4	19
Apparent time of true Eclip. ☍ *Aug.*	29	7	55	45
Hourly motion ☽ *a* ☉			27	16
Sum Horizontal Parallax ☉ and ☽			53	32
Semidiameter ☉ ſubtract			16	10
Reſt Ap. Semidiameter Earths ſhadow			37	22
Semidiameter Moon add			14	52
Sum			52	14
Moon's true Latitude ſubtract			4	24
Reſt Scruples deficient			47	50
Scruples of Incidence			52	3
Time of Incidence, or half duration		1	54	32
Scruples of half continuance in total darkneſs			22	4
Time of half continuance in total darkneſs			48	33
Interval, of ☍, and greateſt obſcuration ſubtract			0	48

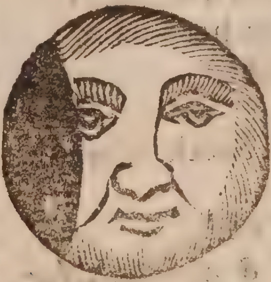
Hence the apparent Time at *London* of the

	D.	H.	M.	S.	
Beginning 1718. *Aug.*	29	6	0	25	P. M.
Beginning total dark		7	6	24	
Middle, or great dark		7	54	57	
True Ecliptic ☍		7	55	45	
End of the total dark		8	43	30	
End of Eclipſe		9	49	29	
Continuance of total dark		1	37	6	
Total Duration		3	49	4	
Digits Eclipſed		19.	18	19	

		M.	S.	
Lat. ☽ at	Beginning	0	32	North deſcending.
	End	9	21	South aſcending.

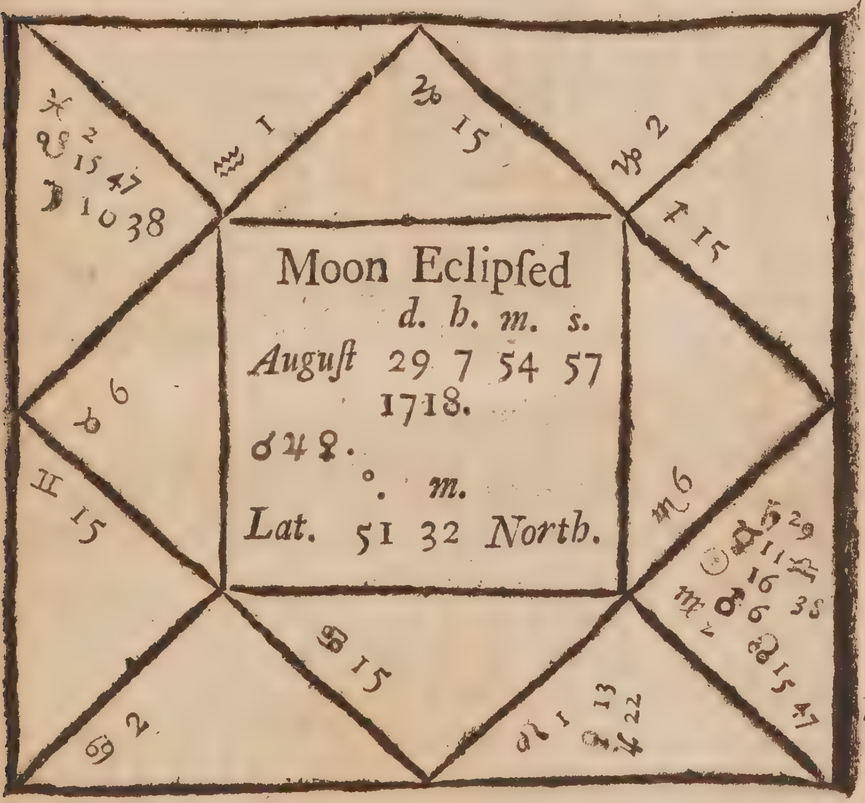
The beginning of this Eclipſe will not be ſeen at *London*, for it begins 37 M. 25 S. before the Moon riſeth, and at her riſing ſhe will appear thus much Eclipſed.

The Type.



Note, The Moon doth not riſe that Night till 6 hours 28 min. and the Sun ſetteth at *London* at 6 hours 27 min. and at 1 hour 26 min. 57 ſec. after the Moon is riſen, ſhe will appear totally Eclipſed, as this Type plainly ſheweth.

At the middle time of this Eclipſe 6 deg. of *Taurus* is on the Cuſp of the Eſtern *ſiniſter*, 15 deg. of *Capricorn* culminates, *Venus* and *Jupiter* are in the fifth, and *Saturn*, *Sun*, *Mars*, *Mercury* and *Dragon's-Head*, all crowded in the ſixth; the Eclipſed Moon falls near *Dragon's-tail* in the 12th Houſe, in the ſecond Decanate or face of *Piſces*, *Jupiter* Lord thereof under the Earth, which denotes ſuch Perſons ſignified by *Jupiter* to be of high Minds, lofty Diſpoſitions, aiming at things out of their reach; it ſignifies the Death of many of them; Earthquakes, and miſchief to Fiſh. The Eclipſe begins in the Aſcendant, and ends in the 11th Houſe of Heaven. The Places ſubject to the Eclipſed Sign *Piſces*, are *Portugal*, *Galatia*, *Egypt* the higher, *Lydia*, *Pamphylia*, *Calabria*, *Normandia*, *Luſitania:* Cities and Towns, *Alexandria*, *Compoſtella*, *Sibilia*, *Worms*, &c.



The Sixth and laſt will be an inviſible Eclipſe of the Sun, on *Saturday* the 13th day of *September*, at 7 in the Morning; and altho' the Sun is then an hour high, yet the Eclipſe will not be ſeen at *London*, by reaſon of the Moon's great North Latitude, but in *Poland*, *Swedeland*, &c. and by ſuch as Sail in the *Baltick* Sea, and within the *Artick* Circle, will ſee the ſame. And ſo I ſhall conclude my account of the Eclipſes for the Year 1718.

Of the ECLIPSES *which will happen in* 1719.

FOUR times to the Inhabitants of this Terraqueous Globe, will the two great Lights of Heaven be Eclipſed, twice the Sun, and as often the Moon, and only one of the Moon will be ſeen at *London:* They happen as followeth.

The firſt Eclipſe is of the Sun, and will be on *Sunday* the 8th day of *February*, 30 min. paſt 5 in the Morning, it will not be ſeen at *London*, becauſe the Eclipſe ends 4 min. before the Sun riſes; in the Eaſtern parts of *Germany*, it may be ſeen if the Air is clear, and in the Parallel of 51 deg. 32 min. N. there will be 7 deg. 35 min. of the Sun's Body Eclipſed on the South ſide thereof: This Eclipſe falls in the very beginning of *Piſces*.

The Second is an inviſible Eclipſe of the Moon, on *Monday* the 22d Day of *February*, at 8 a Clock in the Morning; the Moon ſets before the Eclipſe begins, ſo 'twill be only ſeen in the Weſtern parts of the World. It is made in 15 deg. of *Virgo*.

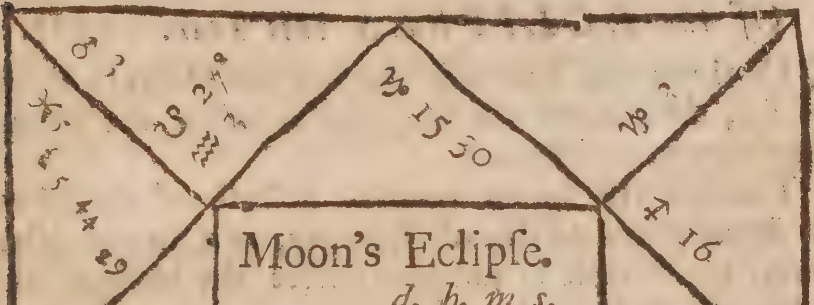
The Third Eclipſe is of the Sun, and inviſible, on *Tueſday* the 4th day of *Auguſt*, at 5 a Clock in the Afternoon; it will not be ſeen at *London* by reaſon of the Moon's great South Latitude, which is augmented by her Parallax in Latitude; it may be ſeen at the *Canaries* Iſlands, and at the adjacent Places. It falls in 22 deg. of *Leo*.

The Fourth and laſt Eclipſe this Year will be a partial and viſible (if the Air is clear) Eclipſe of the Moon, on *Tueſday* the 18th day of *Auguſt* in the Evening, according to the following Calculation.

		D.	H.	M.	S.	
Hence the apparent time at *London* of the	Beginning 1719. *Aug.*	18	7	38	12	P.M.
	Middle, or great dark		8	37	36	
	True Ecliptic ☍		8	45	45	
	End of the Eclipſe		9	37	0	
	Total Duration		1	58	48	
	Digits Eclipſed are		3	9	0	

The Type.

This Eclipſe falls in the firſt Face of *Piſces*, near the Body of *Mars*; it cauſeth Shipwracks, unfortunate Navigations, Drought of Rivers, and loſs of Friends.



Of the ECLIPSES *in* 1720.

IN this Year 1720. there will be only two Eclipſes, and both of the Sun, inviſible.

The Firſt will be on *Thurſday*, *January* 28. at 10 in the Forenoon; it will not be ſeen at *London*, becauſe the Moon's Latitude is then South, which being augmented by her Parallax of Latitude, depreſſeth her below the Sun's Limb. It falls in 19 deg. of *Aquaries.*

The Second will be on *Sunday* the 24th day of *July*, at 4 in the Morning; the Eclipſe will be but ſmall in itſelf, and therefore over e're the Sun riſeth. It falls in 12 deg. of *Leo.*

The one of theſe Eclipſes happeneth before the Sun's *Apogæon*, and the other after, is the reaſon (according to the Laws of Aſtronomy) there will be no Eclipſe of the Moon this Year.

Of the ECLIPSES *this Year.* 1721.

SIX times this Year will the Sun and Moon be Eclipſed, three times the Sun, and as often the Moon; they happen as followeth.

The firſt will be an inviſible Eclipſe of the *Moon*, on *Monday* the 2d day of *January*, at 3 in the Afternoon; the Eclipſe is juſt over before the Moon riſeth; it happeneth in 23 deg. of ♋.

The ſecond Eclipſe is of the *Sun*, and will be on *Monday* the 16th day of *January*, about 8 a Clock at Night; this will only be viſible to the South-Weſt parts of the World; it happeneth in 8 deg. of *Aquaries.*

The third is an inviſible Eclipſe of the Moon, on *Wedneſday* the 28th day of *June*, at 8 in the Morning; the Moon is ſet before the Eclipſe begins. It falls in 17 deg. of *Capricorn.*

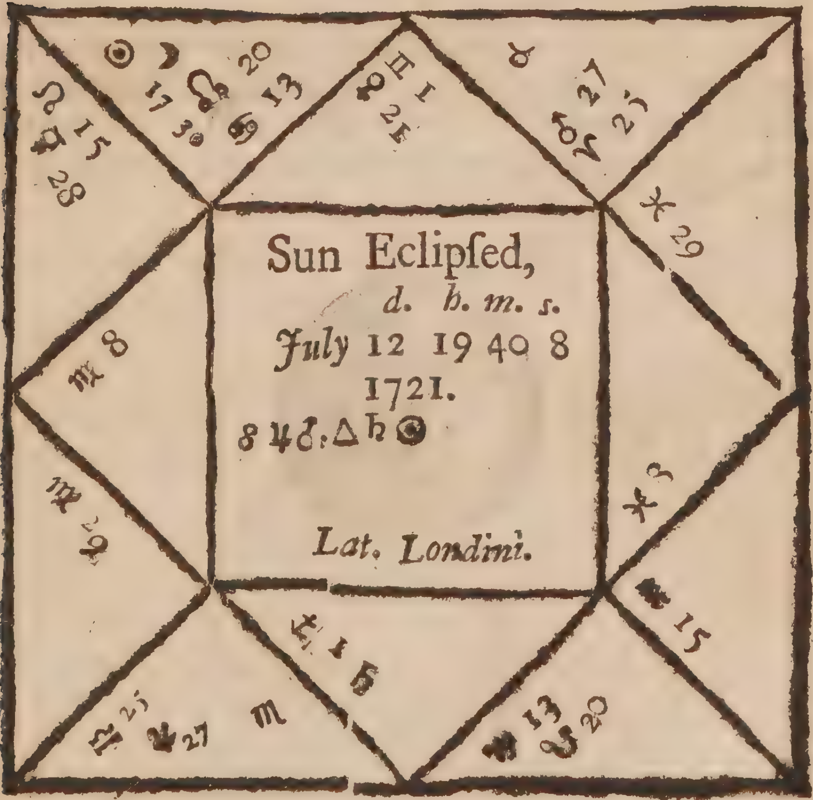
The fourth will be a ſmall Eclipſe of the *Sun*, and viſible, if the Air be clear; it happeneth on *Thurſday*, *July* 13. in the Forenoon, according to the following Calculation.

		d.	*h.*	*m.*	*s.*	
Hence the apparent time at *London* of the	Beginning 1721. *July*	12	19	1	34	P.M.
	Middle, or great darkneſs		19	40	8	
	Viſible ☌		19	45	48	
	End of the Eclipſe		20	21	52	
	Total duration		1	20	18	
	Digits Eclipſed		1	35	0	

The

The Type.

This Eclipſe will be but very ſmall in itſelf, therefore we cannot expect any great Effects therefrom; it falls in the beginning of the Regal Sign *Leo*, and in the 11th Houſe of Heaven, ſignifies the Death of a Mighty Prince, violent Miſchiefs, Cruelty and Toil, a ſcarcity of Corn and Fruit; Murders, Thefts, Abortions to Women with Child.

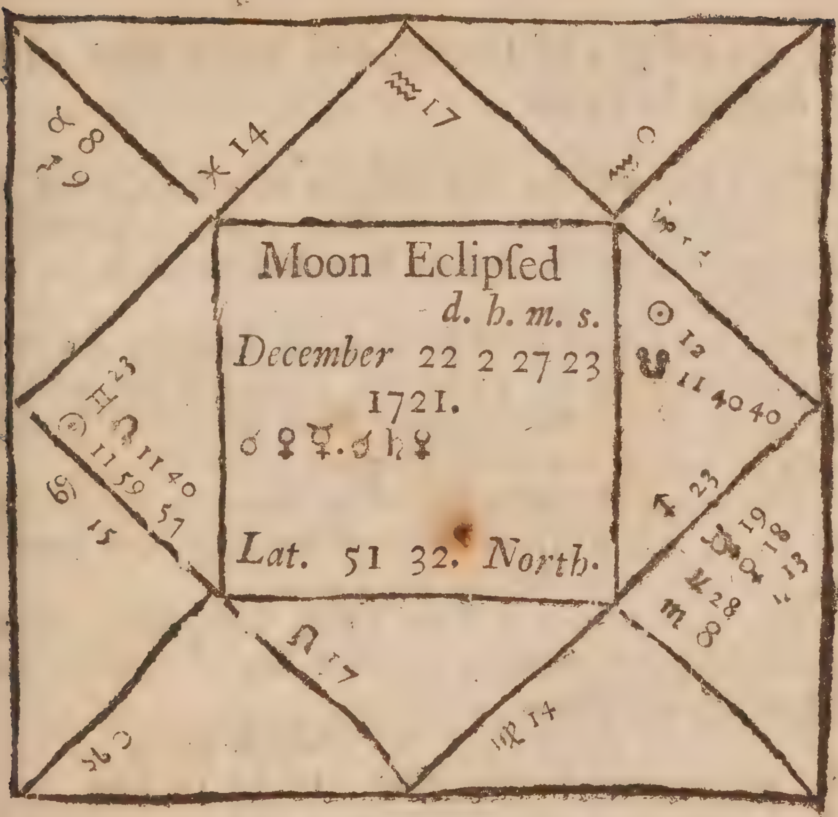


The fifth Eclipſe is of the *Sun* alſo, but inviſible; it happeneth on *Friday* the 8th day of *December*, at one a Clock in the Morning, in 27 deg. of *Sagittarius*; it will be ſeen by our *Antipodes*, and alſo by ſuch as Sail in the Pacifick Ocean.

The ſixth and laſt is a total, and part viſible Eclipſe of the *Moon*, on *Friday* the 22d day of *December*, in the Afternoon, as followeth.

		d.	*h.*	*m.*	*s.*	
Hence the apparent time at *London* of the	Beginning *December*	22	0	32	51	
	Beginning of total dark		1	38	32	
	Middle, or great dark		2	27	23	
	True Ecliptick ☍		2	27	41	
	End of total darkneſs		3	16	14	P.M.
	End of the Eclipſe		4	21	55	
	Continuance total dark		1	37	42	
	Total duration Eclipſe		3	49	4	
	Digits Eclipſed are		20	17	0	

This Eclipſe you ſee begins 32 min. 51 ſec. paſt Noon, and the Moon doth not Riſe that Night till 50 min. paſt 3; ſo you ſee that a great part of the Eclipſe is over before the Moon Riſeth; ſhe will Riſe Eclipſed thus:



This Eclipſe falls in the 2, 1 and 12 Houſes of Heaven, and in the 12th deg. of *Cancer.* This ſtirs up many Infirmities in the common People, which often times proves Mortal; the Seas are infeſted with Pirates, by which the Merchants receive much Loſs and Damage in their Adventures: It alſo betokens Inundations, or an overflowing of the Sea-banks; and that Women will often (as well as the Sea) go beyond their limited Bounds. The Places concerned in the Effects of this Eclipſe, are *Scotland, Holland,* &c. *York, St. Andrew, Amſterdam, Venice, Conſtantinople, Lubeck, Genoa,* &c.

On the 14th day of *July*, 1721. there happens an hateful Oppoſition of the two Superiours *Jupiter* and *Mars*, from *Aries* and *Libra*, in 27 deg. thereof; this puts forward the Effects of the *Sun*'s Eclipſe then beginning to operate.

Of

Of the Eclipſes of the Sun *and* Moon *that will happen in* 1722.

THERE will be five Eclipſes this Year, three of the Sun, and two of the Moon; the firſt two o the *Sun* will not be ſeen at *London*; they happen in the following Order.

The firſt Eclipſe is of the *Sun*, on *Saturday* the 6th day of *January*, at 11 in the Forenoon, not viſible by reaſon of the Moon's great South Latitude. It will only be ſeen in the Southern parts of the World.

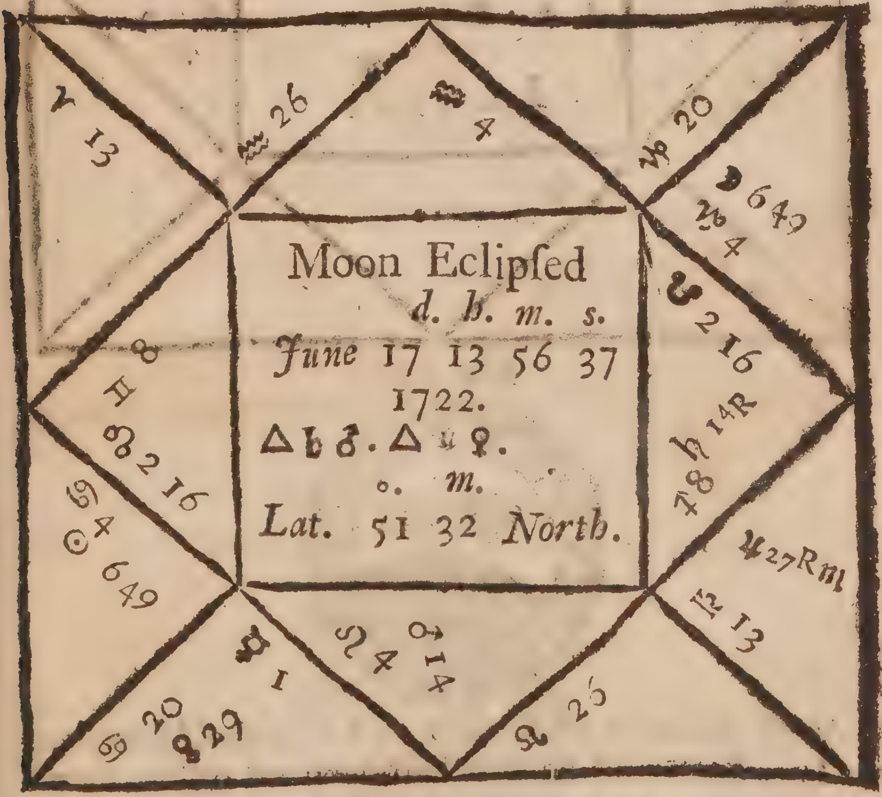
The ſecond Eclipſe will fall on *Saturday* the 2d day of *June*, at 8 at Night; it is of the *Sun*, and inviſible; it falls in 22 deg. of the Twins.

The third Eclipſe is of the *Moon*, and viſible, if the Air be clear, on *Monday* the 18th day of *June* in the Morning, as follows.

Hence the apparent time at *London*, of the

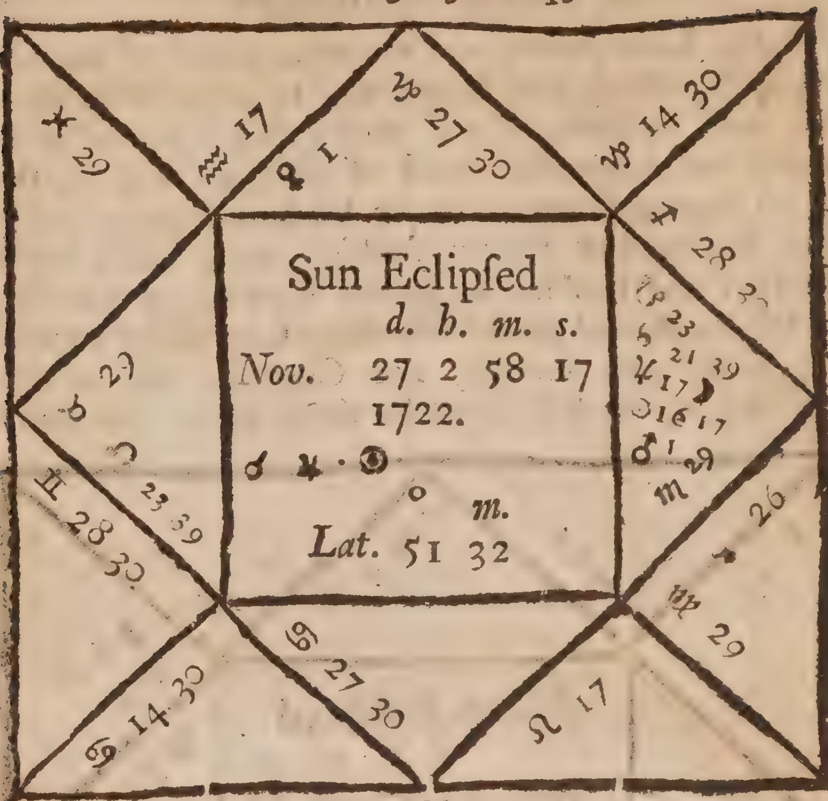
	d.	*h.*	*m.*	*s.*	
Beginning Eclipſe *June*	17	12	19	50	
Beginning total darkneſs		13	31	8	
Middle, or great darkneſs		13	56	37	
True Ecliptick ☍		13	58	40	
End of total darkneſs		14	22	6	P. M.
End of the Eclipſe		15	33	24	
Continua~~tion~~nce total darkneſs			50	58	
Total duration		3	13	34	
Digits Eclipſed		13ᴰ	32	0	

This Eclipſe will be total with continuance, an falls in 6 deg. of *Capricorn*, in the 8th Houſe; thi denote denotes Earthquakes, and the unhappineſs of eminent Men, Rebellion, and People will be addicted to Ramble, and to Sports of the worſer ſort. Surely, if we would but obſerve the hand of God, we may ſee, that in all Ages he forewarns us by his Inſtruments; but we like ſtiff necked People, nothing regard God's handy Works; and tho' his Judgments have a long time been in the Land, and great Calamities ſeem ſtill to impend, yet none truly amends, nor Condoles our unhappy Differences, but ſtill Covet for thoſe things that periſh.

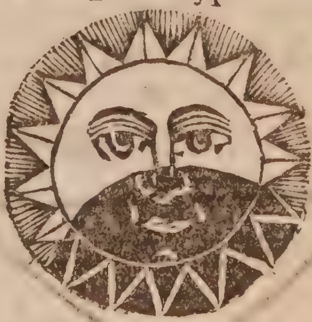


The fourth Eclipſe is of the *Sun*, and, if the Air be clear, will be part viſible at *London*; it will be on *Tueſday*, *November* 27. in the Afternoon, *viz.*

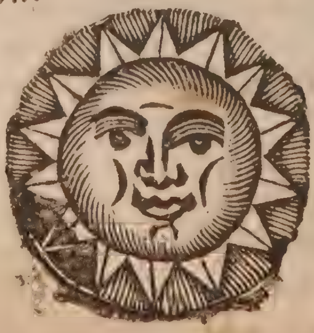
		d.	h.	m.	s.	
Hence the apparent time of the	Beginning *November*	27	1	50	52	P. M.
	Middle		2	58	17	
	Viſible ☌		3	1	44	
	End of Eclipſe		4	1	20	
	Total Duration		2	10	28	
	Digits Eclipſed		5^{8}	47	0	



The Type.



At 58 *Minutes* 17 *Seconds* paſt 2 in the Afternoon, the Suns Body will be near half dark'ned on the South ſide, as you may ſee by the Type above, and the Eclipſe is not over when the Sun ſets, as may be ſeen by this Type below.



Sun Sets thus at *London.*

November 27 1722.

This Eclipſe falls in 16 Deg. *Sagitarius*, and in the 7th Houſe; in which there is no leſs than 5 of the 7 Planets with the *Dragons-tail*: This creates Troubles and Croſſes to the Commonality, ſtirs up many tedious Law-ſuits, and many Differences are like to ariſe amongſt married People; it alſo denotes the Motion of Armies, Wars, effuſion of Blood, detriment to Noble Men, Murders, Thefts, Robbers on the High-ways, Depopulations, Abortions to Women with Child, Malignant Fevers, Deſtruction to Horſes. The Effects of this Eclipſe in particular falls on *Spain*, *Hungary*, *Arabia*, *Fœlix*, &c.

The fifth and laſt Eclipſe falls this Year on *Tueſday December* 11, and is a partial Eclipſe of the *Moon*, the beginning whereof will not be ſeen at *London*; but if the Air is clear, the Middle and End will be ſeen: It is in the Afternoon, according to the following Calculation.

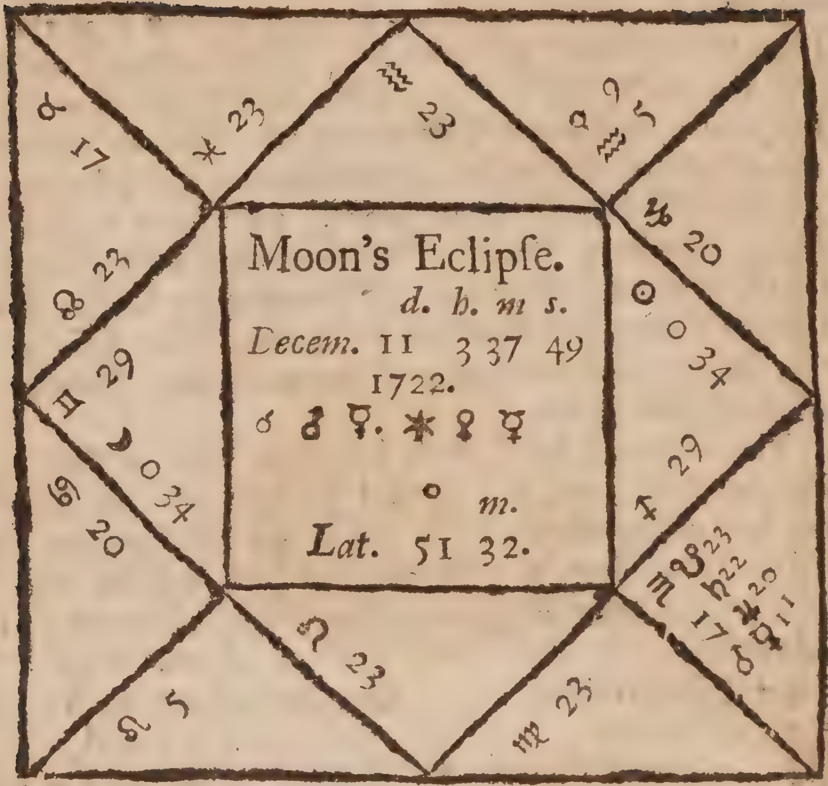
Hence the apparent time at *London* of the		d.	h.	m.	s.	
Beginning	*Dec.*	11	2	22	45	P. M.
Middle			3	37	49	
True Ecliptick ☍			3	44	49	
End of the Eclipſe			4	52	53	
Total duration			2	30	8	
Digits Eclipſed are			5	36	0	

The Type.

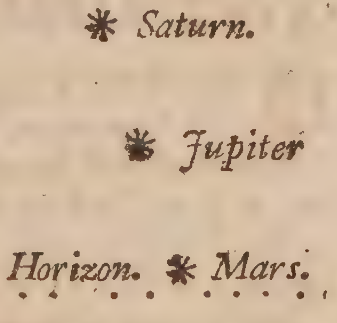
The Moon Riſeth nearly thus

December, 11, 1722.

This Eclipſe falls in the Aſcendant, and in the very beginning of the Tropical Sign *Cancer*: It ſtirs up Vexations and Troubles to young Women, plenty of Showers, and over-ſwelling of Rivers; with many ſudden alterations of the Air. The Common-People are afflicted both in Body and Mind, the principal Significator of this Eclipſe is the *Moon*, ſhe being both Lady of the Sign and Houſe where the Eclipſe is made: *Scotland* is threat'ned.



Beſides theſe 5 Luminary Eclipſes, there will be a moſt unuſual Conjunction of the 3 Superior Planets ♄, ♃ and ♂ in 24 *Deg.* ♐; the true ☌ of ♄ and ♃ happeneth on *Thurſday* the 27th Day of *December*, 4 *min.* paſt 8 a-clock at Night, in 23 *Deg.* 41 *Min.* 10 *Sec.* of ♐; *Saturn* has then 1 *Deg.* 8 *Min.* 6 *Sec.* North Lat. Deſcended; and *Jupiter*'s Latitude is 21 *Min.* 44 *Sec.* North deſcending alſo; ſo that *Saturn* will be Elevated 46 *Min.* 22 *Sec.* above *Jupiter.* And at the ſame time, *Mars* is in *Sagitarius* 22 *Deg.* 39 *Min.* 56 *Sec.* with 23 *Min.* South Lat. aſcending. If the 28 Day of *December* 1722 be a clear Morning, I deſire all Ingenious Perſons to caſt their Eyes upon the South-Eaſt Horizon, at 21 *Min.* paſt 6, they will then ſee *Saturn* Riſing, and about a Minute after, you will ſee *Jupiter* Riſe; and about 6 *Min.* after *Jupiter*, you will ſee *Mars* Riſing; the like Appearances has not happened in the Memory of Man; and, perhaps, the like may not happen any more. The Planets are all direct and ſwift in Motion; for ſeveral Mornings before and after this, you may ſee theſe three grand Wheels of the Cœleſtial Clock-work Riſe near together, pleaſant to behold; the Effects of which will be terrible to thoſe Kingdoms, Cities and Men unto which they belong. Now give me leave to acquaint you that are not *Aſtrologers*, That there are three ſorts of Conjunctions of *Saturn* and *Jupiter*; which, in *Latin*, they term *Maximam*, viz. the greateſt; *Mediam*, viz. the mean or middle; *Minimam*, viz. the leaſt of all; where Note, That the greateſt *Conjunction* is made in about 794 *Years*, and 331 *Days*; and the middle *Conjunction* is performed in about 198 *Years*, and 261 *Days*; and laſtly, the little *Conjunctions* are performed in about 19 *Years*, 318 *Days*: Then, about the 29 and 30 *Days* of *December*, in the Morning, at their Riſing, will appear thus.



Here is Work cut out for the Scriblers of our times, enough to fill a whole Volume, which I ſhall leave for them to treat on in particular, and only add, this *Conjunction* denotes high Differences between Chriſtian Kings and Princes, their Kingdoms and Monarchies much afflicted, Commotions, Wars, Seditions, Treaſons, alteration of Laws and Cuſtoms, ſtrange Apparitions, prodigious Meters, Plagues, Scarcity and Deſolation, the Death of Great Men, which will be occaſion'd by Wars; becauſe *Mars* (which ſignifies Wars) is cloſe in Counſel with *Saturn* and *Jupiter*: Many remarkable Things, which the narrow Limits I am confin'd to, will not allow me room to mention at preſent.

Of the ECLIPSES which will happen this Year, 1723.

TWO Eclipſes only this Year, and both of the *Sun*, Inviſible.

The Firſt will be on *Thurſday* the 23d Day of *May*, at 4 in the Morning; not to be ſeen in *England*, by reaſon of the *Moon*'s South Latitude.

The Second Eclipſe is of the *Sun*, on *November* 16 at 9 at Night, and therefore Inviſible; it happens in 5 *Degrees* of *Sagitarius*.

On the 3d of *May*, there happens a hateful *Square* of *Saturn* and *Mars*, from *Sagitarius* and *Piſces*; and on the 14th of the ſame Month, a *Square* of *Mars* from *Capricorn* and *Aries*, the Effects of which will be very conſiderable, which I ſhall leave for Time to determine.

Of the ECLIPSES which will happen in 1724.

IN this Year 1724 there will be four Eclipſes, two of each Luminary.

The Firſt will be of the *Moon*, on *Monday April* 27, at 8 a-Clock in the Morning; it will not be ſeen in *England*, becauſe the ☽ is Set before the Eclipſe begins; it falls in 17 *Degrees* of *Scorpio*.

The ſecond will be a great (and almoſt total) Eclipſe of the *Sun*, on *Monday* the 11th of *May*, in the Afternoon, according to the following Calculation.

In the Meridian of *London*, 1724.		*d.*	*h.*	*m.*	*s.*
Equal time true ☌	*May*	11	5	7	30
Mean Anom. of the Sun		10	22	37	30
Mean Anom. of the Moon		6	29	40	23
Longitude of Sun and Moon		♊	1	38	7
North Node ſubſtract		♉	25	33	19
Argument Latitude		0	6	4	48
Moon's true Lat. North Aſcend.				31	44
Reduction ſubſtract				1	21
Ecliptick place Moon		♊	1	36	46
Hourly Motion ☽ *a* ☉				35	2

	d.	*h.*	*m.*	*s.*
Time of Reduction add			2	19
True Ecliptick ☌ is *May*	11	5	9	49
Equation of Time add			8	30
Apparent time true Ecliptic ☌	11	5	18	19
Suns true Place	♊	1	38	12
Right Aſcenſion Sun		59	31	0
Apparent time from Noon add		79	34	45
Sum, Right Aſcenſion M. Cœli.		139	5	45
Compliment		40	54	15
Medium Cœli in Eclipti	♌	16	38	0
Declination Culminating point North		15	53	0
Meridian Angle		72	27	0
Altitude Equator at *London*		38	28	0
Altitude Midheaven		54	21	0
Altitude Nonageſſima deg.		56	14	0
Diſt. Midhea. *a* Nonageſſim.		12	12	0
Nonageſſima degree	♌	4	26	0
Diſt. ☉ *a* Nonageſſima	2	2	47	48
Horizontal Parallax ☽ *a* ☉		59	43	0
Parallax Longitude ☽ *a* ☉			44	9
Parallax Latitude ☽ *a* ☉			32	12

At one Hour ~~falling~~ following true ☌	11	6	18	19
The Suns place is	♊	1	40	36
His Right Aſcenſion		59	34	0
Apparent time from Noon		94	34	45
Sum, Right Aſcenſion M. Cœli		154	8	45
Compliment		25	51	15
Medium Cœli in Ecliptic	♍	2	9	0
Declination Culminat. point		10	44	0
Meridian Angle		68	58	0
Altitude Equator at *London*		38	28	0
Altitude Midheaven		49	12	0
Altitude Nonageſſima deg.		52	25	0
Diſt. Midheaven *a* Nonageſſima		17	13	0
Nonageſſima deg.	♌	14	56	0
Diſt. ☉ *a* Nonageſſima deg.	2	13	15	24

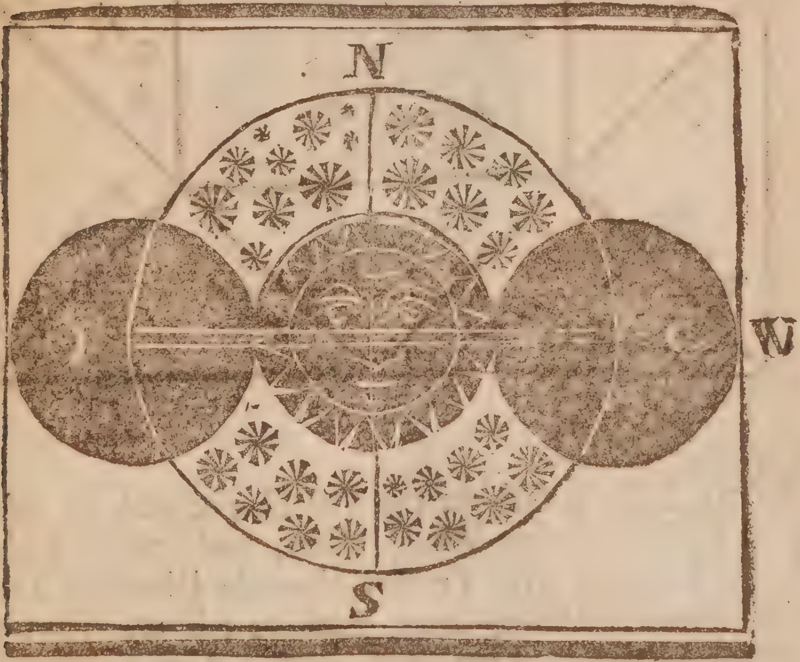
	d.	*h.*	*m.*	*s.*
Horizontal Parallax ☽ *a* ☉			59	41
Parallax Longitude ☽ *a* ☉			45	17
Parallax of Latitude ☽ *a* ☉			36	24
Hourly Motion *Moon* a *Sun*			35	2
Dif. Parallax Long. ſub.			1	8
Viſible hourly motion *Moon* a *Sun*			33	54
Interv. true and viſible ☌ add		1	18	10
Viſible ☌ 1724 *May*	11	6	36	29
Suns place	♊	1	41	21
Right Aſcenſion Sun		59	34	0
Apparent time a Noon		99	7	15
Sum, Right Aſcen. M. Cœli		158	41	15
Compliment		21	18	45
Medium Cœli in Ecliptic	♍	6	57	0
Declina. Culminat. point North.		8	59	0
Meridian Angle		68	12	0
Altitude Equator at *London*		38	28	0
Altitude Medium Cœli		47	27	0
Altitude Nonageſſima deg.		51	6	0
Dlſt. M. Cœli *a* Nonageſſima		18	49	0
Nionageſſima deg.	♌	18	8	0
Diſt. ☉ *a* Nonag. deg.	2	16	26	39
Horizontal Parallax *Moon* a *Sun*			59	41
Parallax Longitude *Moon* a *Sun*			45	9
Diſt. of *Sun* a *Moon*			45	9
Parallax Latitude *Moon* a *Sun*			37	29
True Latitude *Moon* North Aſcend.			36	18
Viſible Latitude *Moon* South			1	11
Semidiameter *Sun*			16	3
Semidiameter *Moon*			16	34
Sum, Semidiameters			32	37
Viſible Latitude ſub.			1	11
Reſt. parts deficient			31	26
Digits Eclipſe are		11	45	0
Scruples of Incidence			32	36
Time of Incidence ſub.			56	27
Time Repletion add			49	35
Interval between viſible ☌ and the greateſt darkneſs ſub.		}	0	10

Hence

		d.	h.	m.	s.	
Hence the apparent time at *London* of the	Beginning 1724. *May*	11	5	39	52	P.M.
	Middle, or great darkneſs		6	36	19	
	Viſible ☌		6	36	29	
	End of the Eclipſe		7	25	54	
	Total duration		1	46	2	
	Digits Eclipſed are		11	45	0	

		m.	s.	
Lat. ☽ Seen	Beginning	1	12	South Aſcend.
	End	1	14	

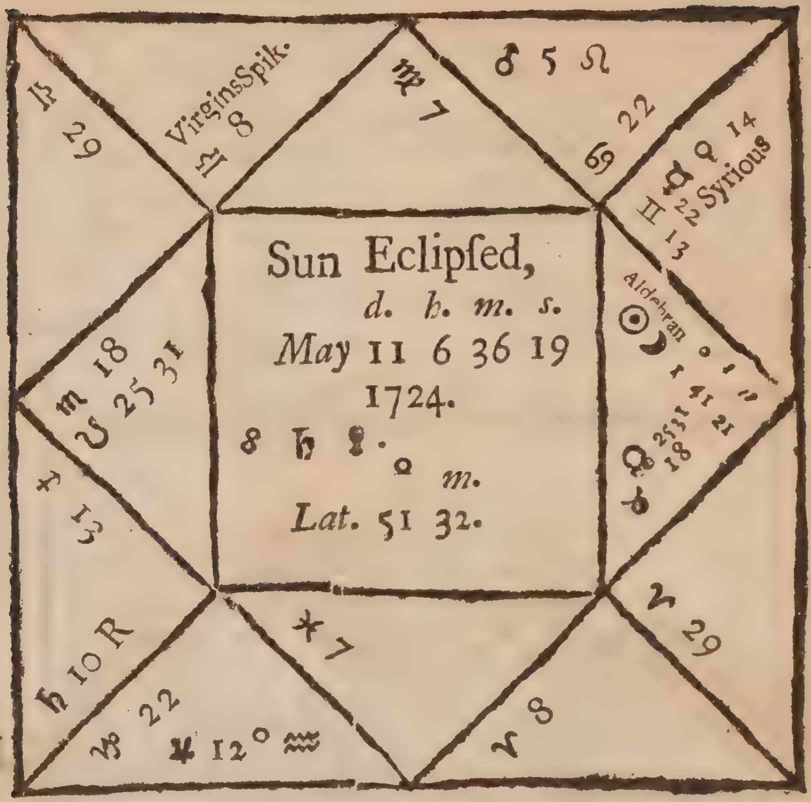
The Type.



I would deſire all Ingenious Gentlemen that are able, and fitted with proper Inſtruments, to Obſerve the ſame; and to communicate their Obſervations. Here you are to Note, That it will be greater in the Southern Parts of *England*, than it will be in *Lancaſhire*, &c. *Mars*, *Venus* and *Mercury* (beſides many fixed Stars) will be ſeen.

This Eclipſe will be very great and terrible to the beholders, in *England*; eſpecially in the South Parts thereof, as at *Portſmouth*, &c. it will be near Total; but at *London* we ſhall have a Thread of Light on the North-ſide thereof, as you may the better perceive by the Type above.

This



This Eclipſe falls in the 7th Houſe, and in 1 deg. of ♊; this creates Wars, Duels, and much Bloodſhed; Robbers and Pyrates abound; laborious Troubles amongſt Men: And, Authors tell us, That an Eclipſe of either Luminary, in the Airy Trigon, (as this is) ſtirs up Hurricanes, ſtormy Winds, peſtilential Diſeaſes, Death of Birds, or the Fowls of the Air. The Places likely to be concern'd in this Eclipſe, are *Flanders*, *Brabant*, *Lombardy*, *Armenia*, *Barbadoes Iſland*, *London*, *Bamberg*, *Norinberg*, *Lorain*, *Ceſena*, *Hasford*, *Bruges*, *Corduba* and *Mentz*. *Thou, oh! Lord, haſt taught me from my Youth up, untill now; therefore will I tell of thy wond'rous Works*, Pſa. 71. 15.

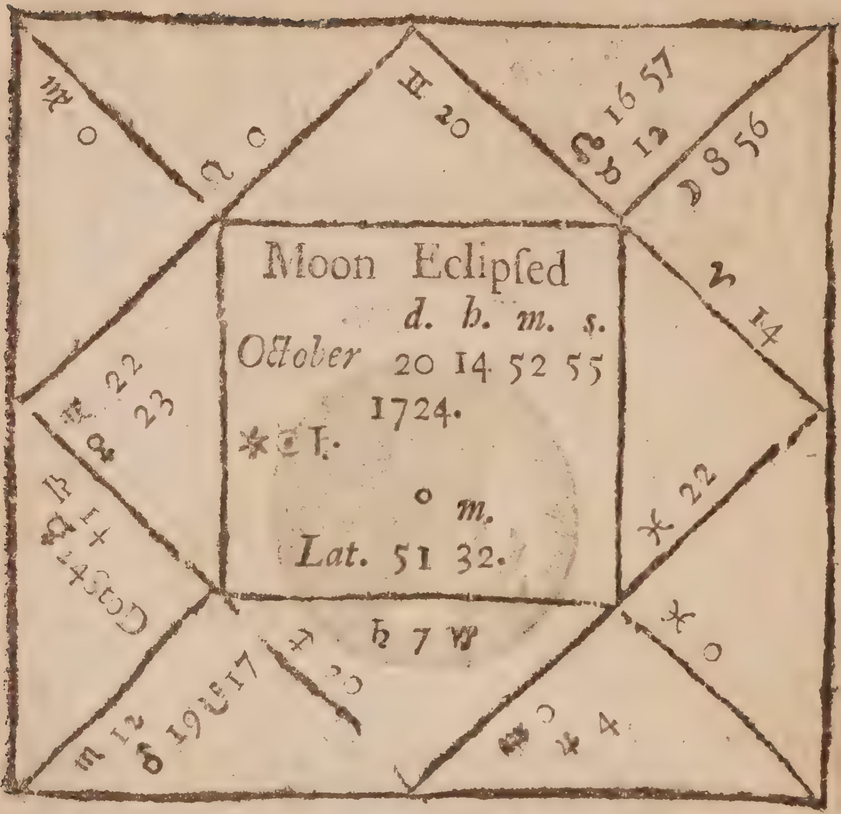
The Third will be a Viſible Eclipſe of the *Moon*, on *Wedneſday* the 21ſt of *October*, in the Morning, as followeth.

Hence

		D.	H.	M.	S.	
Hence the apparent time at *London* of the	Beginning *October*	20	14	52	55	P.M.
	True Ecliptic ☍		16	2	51	
	Middle, or great dark		16	8	53	
	End of the Eclipſe		17	24	51	
	Total Duration		2	31	56	
	Digits Eclipſed are		7°	4	0	

The Type.

This Eclipſe falls in 8 deg. of ♉, an Earthy Sign, and in the 8th Houſe of Heaven; it denotes Damage to Witty and Learned Men, Merchants, Scribes, *&c.* dull Trading, a ſcarcity of the Fruits of the Earth, and the Death of great Cattle. Caſt your Eye on the following Figure; and, there you'll ſee all the Planets are under the Earth, except the Moon, who is in the deſcending Part of Heaven, and ♀ is near Riſing in the Eaſt; the *Dragon's-tail* and *Mars* in the 3d Houſe, denotes Misfortunes to Travellers.



The Fourth and laſt Eclipſe, will be on *Wedneſday*, *November* 4 at 11 at Night ☉; and therefore Inviſible in *England*; it falls in 23 deg. of ♏.

Of the ECLIPSES *of the* Sun *and* Moon *that will happen in* 1725.

WITHIN the Perimeter of this Year, there will be ſix Eclipſes, four of the Sun, and two of the Moon; only one Viſible at *London*, and 'tis of the Moon; they happen in the following Order.

The firſt Eclipſe is of the Sun, on *Friday* the 2d Day of *April*, at 2 a-clock in the Morning; it will not be ſeen in any Part of *Europe*: It falls in 23 deg. of the Cœleſtial *Ram*.

The ſecond is an Inviſible Eclipſe of the Moon, on *Friday* the 16th Day of *April*, at 9 a-clock in the Morning: the Moon is Set before the Eclipſe begins; it happeneth in 7 deg. of the *Bull.*

The third is of the Sun, Inviſible; on the 1ſt Day of *May*, at 10 in the Forenoon: It will only be ſeen by ſuch as Sail within the Artick Circle; it falls in 21 deg. of ♉.

The fourth Eclipſe is of the Sun alſo, and Inviſible; on *Saturday*, *September* 25, at 7 in the Morning. This will only be ſeen in the Northern Parts of the World. This falls in 12 deg. of *Libra.*

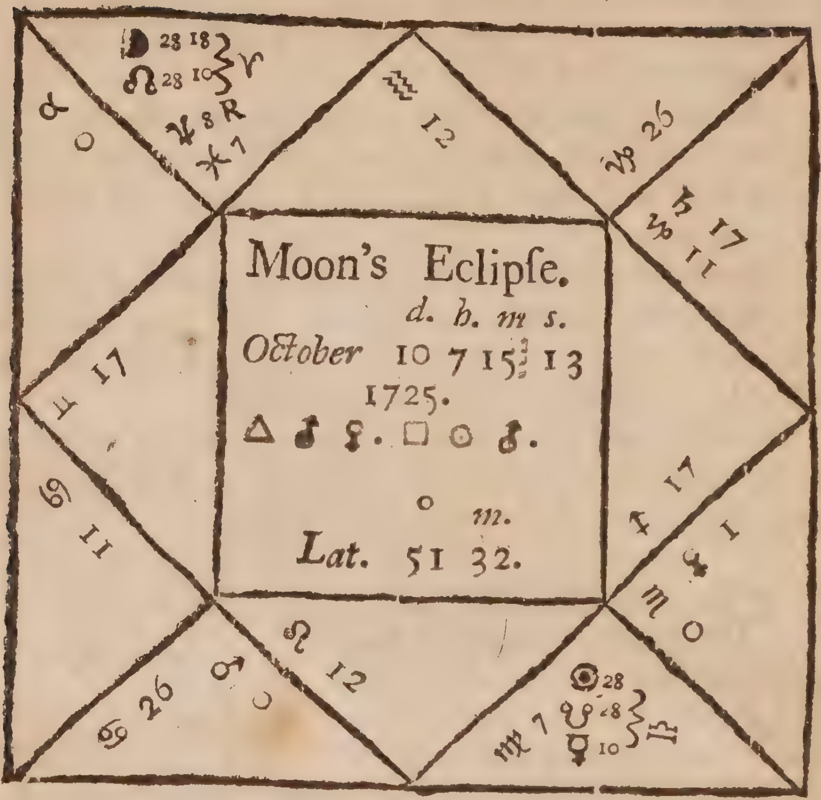
The fifth is a great and Viſible Eclipſe of the Moon, on *Sunday* the 10th Day of *October*, in the Evening, according to the following Calculation.

Hence the apparent time at *London* of the

	d.	*h.*	*m.*	*s*	
Beginning *October*	10	5	29	7	
Beginning of total darkneſs		6	27	25	
Middle, or great darkneſs		7	15	13	
True Ecliptick ☍		7	15	18	
End of total darkneſs		8	3	1	P.M.
End of the Eclipſe		9	1	19	
Continuance total darkneſs		1	35	36	
Total duration		3	32	12	
Digits Eclipſed are		21	36	20	

The Type.

This



This Eclipſe falls in 28 deg. *Aries*, and in the 11th Houſe of Heaven; it ſignifies the Death of Women, Vexations and Sadneſs to many People, a general Rot amongſt Sheep and Rabbets in *England*.

The ſixth and laſt Eclipſe is of the Sun, on *Sunday* the 24th Day of *October*, at 11 a-clock at Night, and conſequently Inviſible in *England* or any Part of *Europe*; it falls in 12 deg. ♏.

Beſides theſe ſix Luminarian Eclipſes, there will be a famous Conjunction of the two Maleficks, ♄ and ♂, in 15 deg. of ♑; it will be on the 5th Day of *January*; they are then Morning-ſtars, and near the Sun, ſo cannot be ſeen.

Of the ECLIPSES *which will happen in* 1726.

FOUR Eclipſes this Year; two of the Sun, and two of the Moon.

The firſt is of the Sun, on the 22d Day of *March*, at 2 in the Afternoon, Inviſible, by reaſon of the Moon's South Latitude. It falls in 12 deg. of *Aries.*

The ſecond will be on *Tueſday*, the 5th Day of *April*, at one a-clock in the Afternoon, of the Moon, and Inviſible; it falls in 26 deg. ♎.

The third is an Eclipſe of the Sun, and part Viſible, on *Wedneſday* the 14th Day of *September*, in the Afternoon, as followeth.

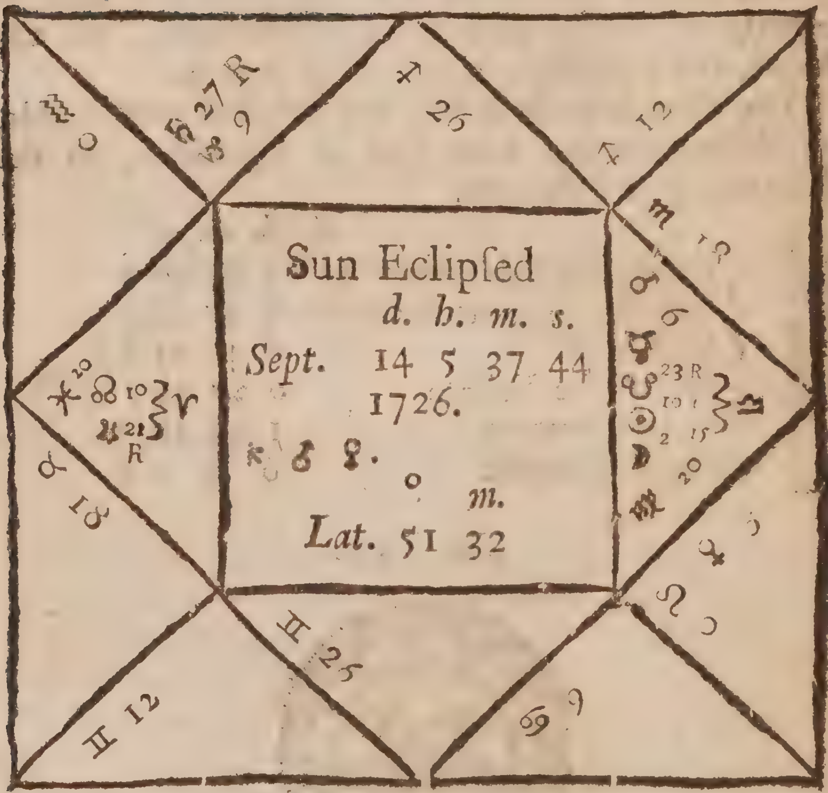
Hence the apparent time at *London* of the

	d.	h.	m.	s.	
Beginning *September*	14	4	44	28	P. M.
Middle, or great darkneſs		5	37	44	
Viſible ☌		5	40	21	
End of the Eclipſe		6	27	38	
Total Duration		1	43	10	
Digits Eclipſed		6	3	0	

The Type.

The Setting Sun will appear as this Type below ſheweth. It will be well worth the Obſervation of all the Ingenious.

This



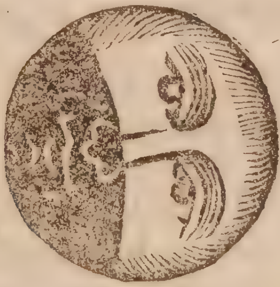
This Eclipſe falls in 2 deg. of ♎, and in the 7th Houſe; this (Aſtrologically) ſignifies a ſickly Air, tempeſtuous Storms of Hail; and, that Corn will now advance its Price.

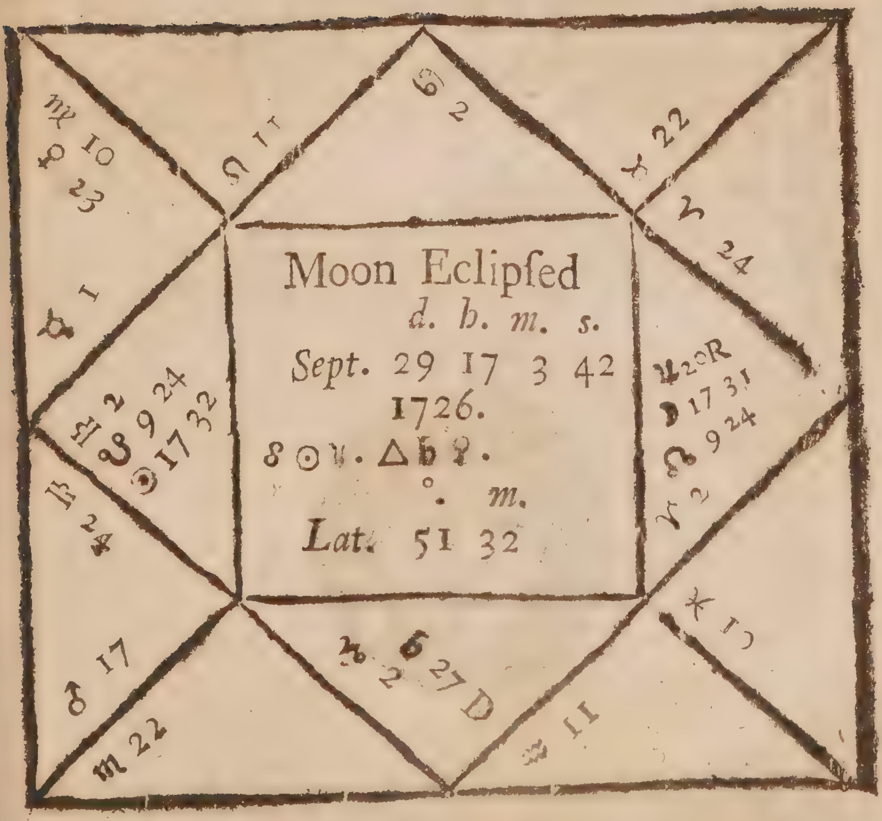
The fourth and laſt, is a partial Viſible Eclipſe of the Moon, on *Friday* the 30th Day of *September*, in the Morning, according to the following Calculation.

Hence the apparent time at *London* of the

	d.	h.	m.	s.	
Beginning	*Sept.* 29	15	53	16	P. M
Middle		17	3	42	
True Ecliptick ☍		17	10	55	
End of the Eclipſe		18	14	8	
Total duration		2	20	52	
Digits Eclipſed are		4°	58	0	

The Type.





By the Scheme above, you ſee this Eclipſe falls in the ſecond Face of ♈, and in the 7th Houſe, denotes detriment to Noble Men, ſcarcity of the Fruits of the Earth; and *Mars*, being Lord of this Eclipſe, ſtirs up much Miſchief, Wars, Quarrels, Duels, Maſſacrees, *&c.* hot Air, Thunder and Lightning, little Rain, Ship-wracks, loſs by Pyrates at Sea. ☍ ♄ ♂ R. 6 *Febr.* ☍ ♄ ♂ 30 *March* in 3 deg. of ♌ and ♒.

Of the ECLIPSES *which will happen in* 1727.

THere will be only two Eclipſes this Year, and both of the *Sun*, one whereof will be Viſible at *London*, if the Air be clear; they happen as followeth.

The firſt will be Inviſible, on *Saturday March* the 11th, at 8 at Night; it happeneth in 1 deg. of ♈.

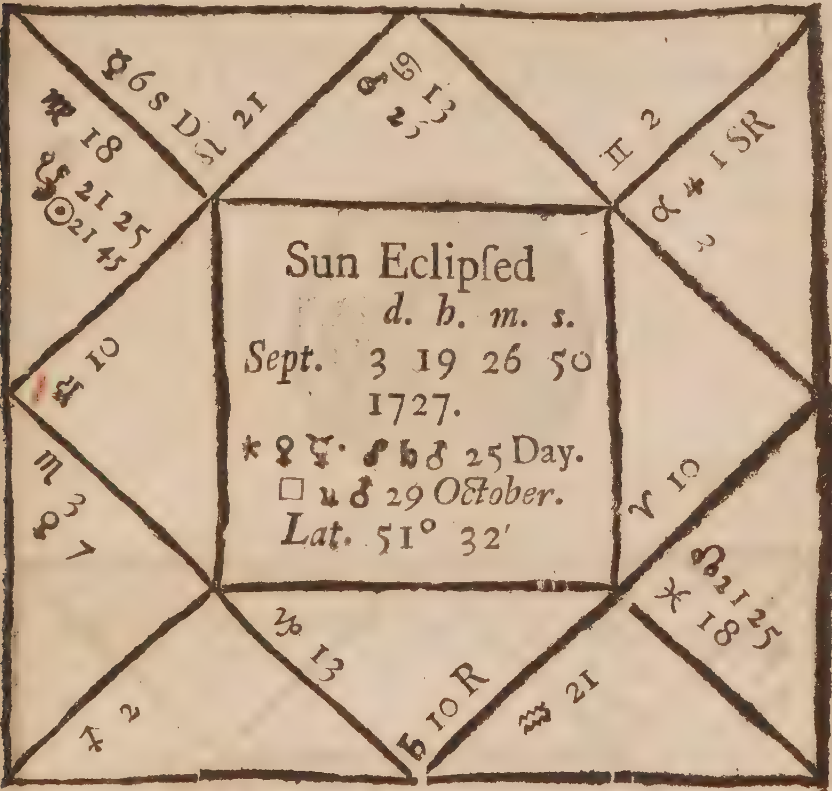
The other falls on *Monday*, *September* 4, in the Forenoon, according to the following Calculation.

		d.	*h.*	*m.*	*s.*	
Hence the apparent time at *London* of the	Beginning *September*	3	18	51	41	P. M.
	Middle		19	26	50	
	Viſible		19	30	56	
	End of the Eclipſe		20	4	26	
	Total Duration		1	12	45	
	Digits Eclipſed		2	21	0	

The Type.

This Eclipſe happeneth in 21 deg. of ♍, and in the 12th Houſe, and ☿ is Lord thereof; this ſtirs up

Seditions, and much Evil to Women, as alſo Damage to Fruit; ☿ exites Men to much Subtilty and Policy in all their Actions, tempeſtuous Winds, Ship-wracks, Pyrates at Sea, Thieves or Robbers at Land, Schiſms and Hereſies in Religion.



On the 12th Day of *January* there will be a ☌ ♄ ♂ in 6 deg. of ♒: And on the 20th of *May* a ⚺ ♄ ♃; and the 23d Day a ☌ ♃ ♂ in 16 deg. of ♉, and □ ♄ ♂; the Effects of theſe I ſhall leave to the Annual Scriblers.

Of the ECLIPSES which will happen this *Year*, 1728.

FOUR times this Year will the *Sun* and *Moon* be Eclipſed, twice the *Sun* and twice the *Moon*; they happen in the following Order.

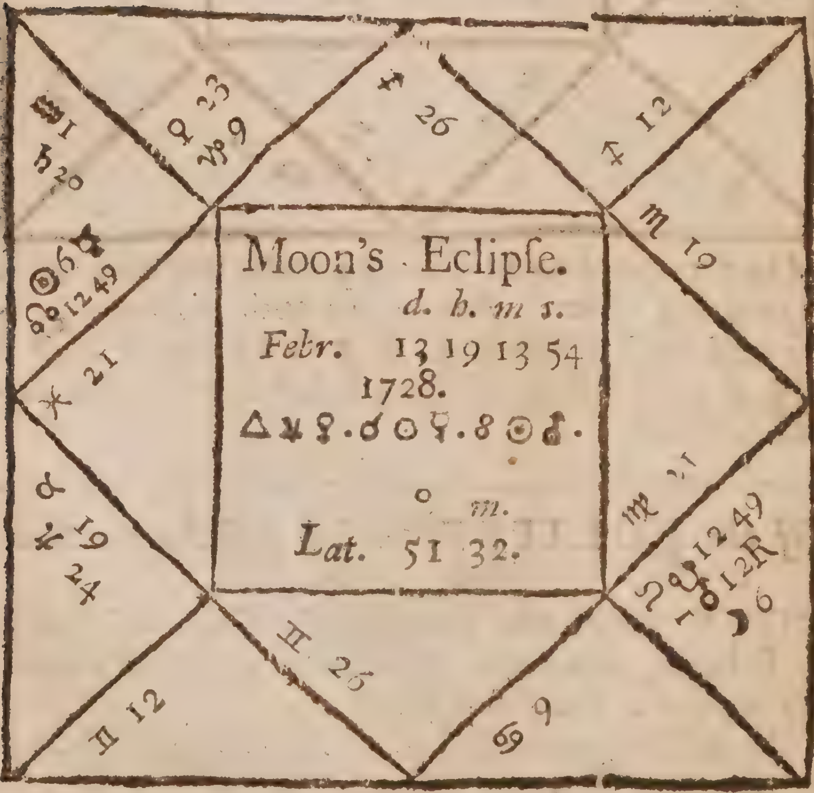
The firſt is a partial Eclipſe of the *Moon*, on *Wedneſday* the 14th Day of *February* in the Morning, as followeth.

Hence the apparent time at *London* of the

	d.	h.	m.	s.
Beginning *Febr.*	13	17	49	8
True Ecliptic ☍		19	8	42
Middle		19	13	54
End of the Eclipſe		20	48	40
Total Duration		2	49	32
Digits Eclipſed		9°	13	0

P.M.

The Type.



Moon's Eclipſe.
d. h. m s.
Febr. 13 19 13 54
1728.
△♃♀.☌☉☿.☍☉♂.
° *m.*
Lat. 51 32.

The Middle and End of this Eclipſe will not be ſeen at *London*, the Moon Sets about 8 Digits darkned; it falls in 6 deg. ♍, and in the 6th Houſe; ☿ being chief Ruler, denotes quick and crafty Actions on the Stage of the World; excites Men to much Subtilty; the Death, or miſerable State of ſome Prince, high Winds, great Robbing both by Sea and Land: ♄ Retrograde in the 6th in ☍ to ☉ in the 12th, ſhews the common People to be much oppreſſed by Taxes, *&c.* and great perplexity by the Treachery of their Servants, and the Death of their Hogs, Sheep, *&c.*

The ſecond will be an Inviſible Eclipſe of the *Sun*, on the 28th Day of *February*, at 8 at Night; it falls in 20 deg. of ♓.

The third Eclipſe is of the *Moon*, on the 8th Day of *Auguſt* at 5 at Night, and therefore Inviſible, by reaſon the Eclipſe is over before the *Moon* Riſeth; this happeneth in 26 deg. of ♒.

The fourth and laſt Eclipſe this Year, will be an Inviſible one of the *Sun*, on the 24th Day of *Auguſt* at 1 in the Morning; the *Sun* is then in 11 deg. of *Virgo.*

Of the ECLIPSES *that will be in* 1729.

FIVE times to the Inhabitants of this Earthly Globe, will the two great Lights of Heaven be Eclipſed from our ſight, three times the *Sun*, Inviſible, and twice the *Moon*, Viſible, and total, with Continuance; they happen in the following Order.

The firſt is of the *Sun*, and Inviſible, on the 18th of *January* at 6 in the Morning; it falls in 9 deg. of ♒.

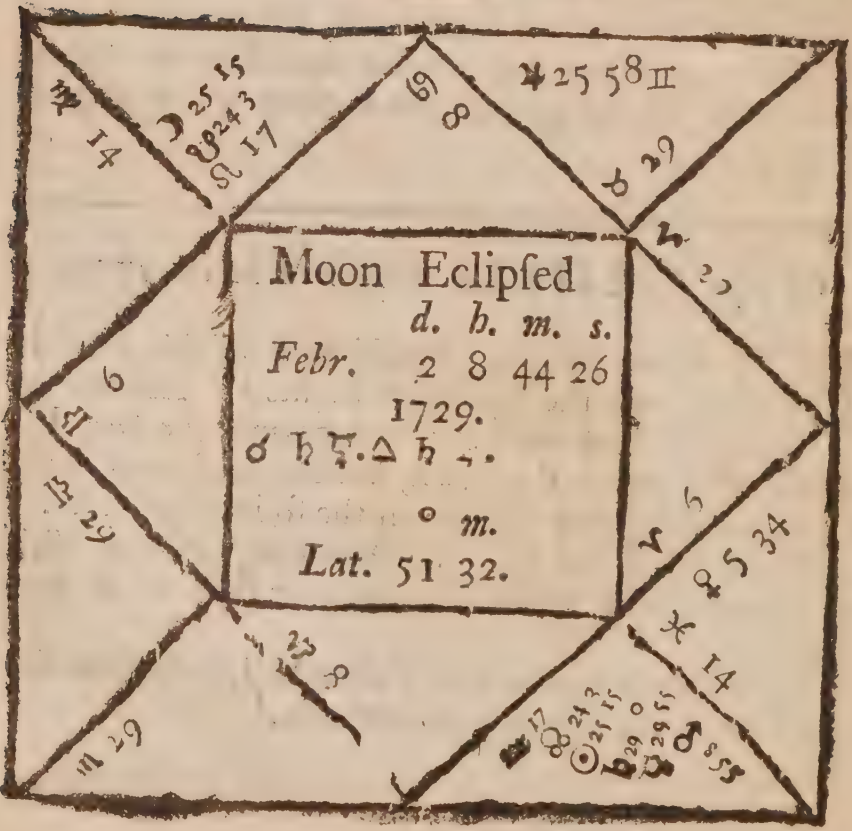
The ſecond is a great and Viſible Eclipſe on *Candlemas* Day in the Evening as followeth.

Hence the apparent time at *London* of the

		d.	h.	m.	s.
Beginning	*Febr.*	2	6	57	52
Beginning of total darkneſs			7	58	7
Middle			8	44	26
True Ecliptic ☍			8	45	25
End of total darkneſs			9	30	45
Full End of Eclipſe			10	31	0
Continuance total darkneſs			1	32	38
Total duration			3	33	18
Digits Eclipſed			19°	17	0

P.M.

The Type.



This Eclipſe falls in the 3d Decanate of ♌, and in he 11th Houſe; *Jupiter* is Lord of the Eclipſe, he ignifies plenty of all uſeful things, and Peace among he People; a wholſom Air and quiet Sea.

The third is of the *Sun* Inviſible, on the 16th Day f *February*, at 9 at Night; it happeneth in 9 deg. of iſces.

The fourth is of the *Sun* alſo, on St. *Swithin*'s Day, t 1 in the Morning, and conſequently Inviſible; it lls in 21 deg. of ♌.

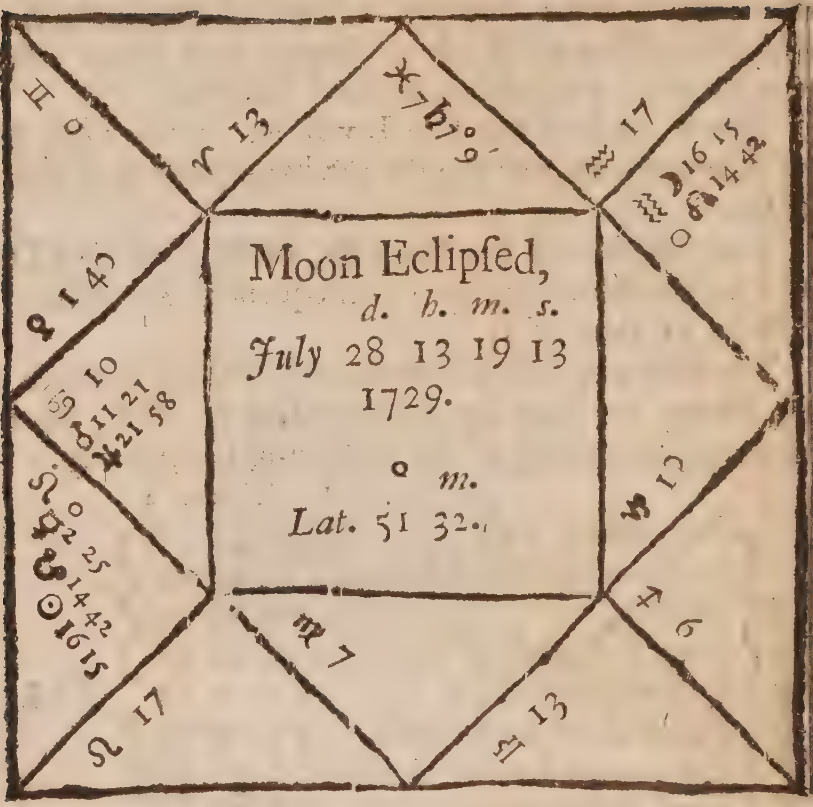
The fifth and laſt is a great and Viſible Eclipſe of e *Moon*, on *Tueſday* the 29th Day of *July*, in the orning, according to the following Calculation.

at *London* of the

	d.	*h.*	*m.*	*s*	
Beginning *July*	28	11	33	5	
Beginning of total darkneſs		12	33	51	
Middle,		13	19	31	
True Ecliptick ☋		13	20	47	
End of the Eclipſe		14	5	11	P.M.
Full End of the Eclipſe		15	5	57	
Continuance total darkneſs		1	31	20	
Total duration		3	32	52	
Digits Eclipſed		18°	47	0	

The Type.

This



This Eclipſe falls in 16 deg. of ♒, and near th
Cuſp of the 9th Houſe; *Saturn* is Lord of thi
Eclipſe: It denotes Sadneſs, Fears, obnoxious Di
ſeaſes, deſtruction to Cattel, unwholſom Air. Ca
your Eyes on the Scheme above, and you'll ſee the tw
Superiors ♃ and ♂ apylying to a Conjunction, in th
Tropical Sign *Cancer*, accompanied by the luſtful *Ve*
nus; theſe are the fore-runners of War, terrib
Slaughters, Fire and Sword, Inundations, *&c.* an
Cruelty uſed by the *Turks* againſt the Chriſtians.

C

Of the ECLIPSES *which will happen in this Year,* 1730.

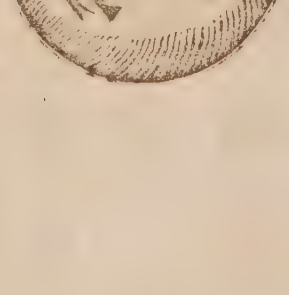
FOUR Eclipſes this Year, 1730. *viz.* three of the *Sun*, and one of the *Moon*, they happen as follows.

The firſt is an Inviſible Eclipſe of the *Sun*, on the 7th Day of *January* between 6 and 7 a-Clock at Night; it falls in 28 ♑.

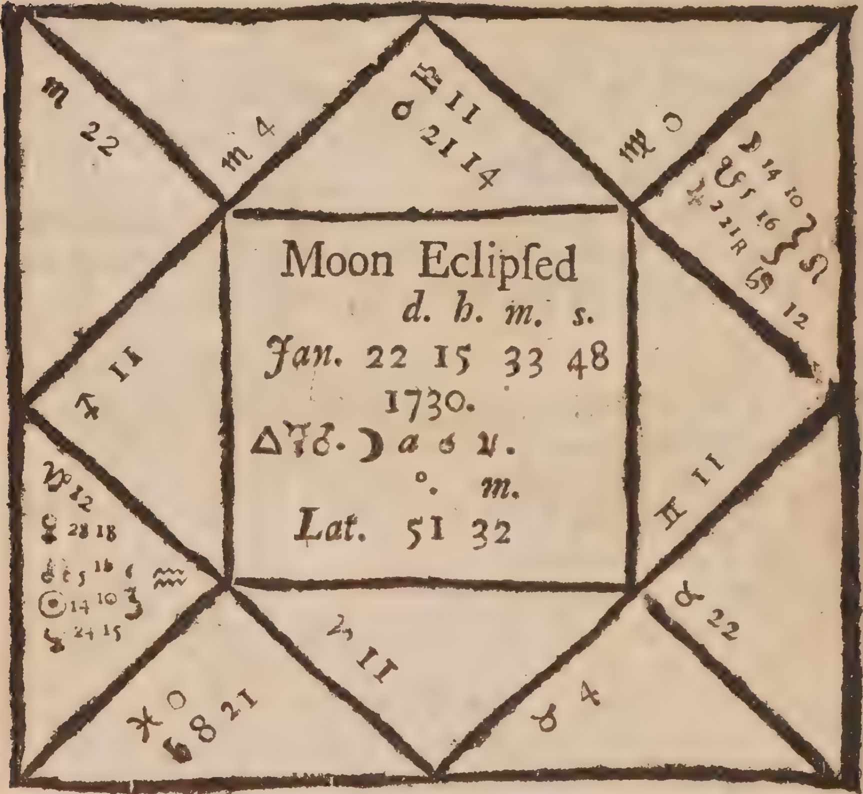
The ſecond is a partial Eclipſe of the *Moon*, and Viſible, (at *London* if the Air be clear) on *Friday* the 23d of *January* in the Morning, as followeth.

			d.	*h.*	*m.*	*s.*	
Hence the apparent time at *London* of the	Beginning	*Jan.*	22	14	37	34	P. M.
	Middle			15	33	48	
	True Ecliptick ☍			15	42	2	
	End of the Eclipſe			16	30	2	
	Total duration			1	52	28	
	Digits Eclipſed are			2°	53	0	

The Type.



The Eclipſe falls in 14 deg. of ♌, and in the 8th Houſe, ♃ and ♀ have the Dominion; and, they in abundance, pour down Peace and Plenty upon Mankind in general, both by Land and Sea.

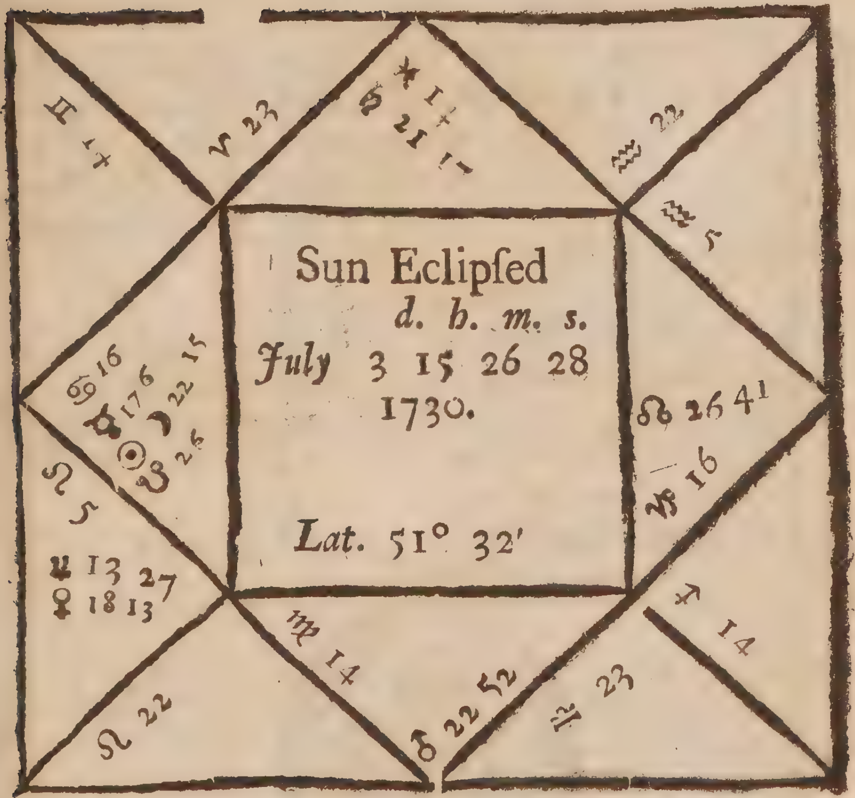


The third Eclipſe this Year will be of the *Sun*, and part viſible, on *Saturday*, *July* 4. in the Morning, according to the following Calculation.

Hence the apparent time at *London* of the

	d.	h.	m.	s.	
Beginning *July*	3	14	36	56	P. M.
Middle		15	26	28	
Viſible ☌		15	28	45	
End		16	18	53	
Total duration		1	41	57	
Digits Eclipſed		6°	7	0	

The Sun Riſeth Eclipſed thus.



This Eclipſe happeneth in the 22d deg. of ♋, and in the Aſcendant; this afflicts great Ladies with Dropſical Humours, the Common People with ſluggiſh Diſeaſes, over ſwelling of the Sea by Fits. Tho' *Venus* being Lady of the Eclipſe, and in the 2d Houſe, gives Health and Happineſs to the Common People in general, Joy, Succeſs, Delight and Pleaſure, increaſe of Worldly Fame or Felicity, temperate Winds, plenty of ſeaſonable Showers, which help to ripen the Fruits of the Earth.

The fourth and laſt Eclipſe is of the *Sun*, and Inviſible, on the 28th day of *December*, at 10 a Clock in the Forenoon; the Moon has then great Parallax in Latitude, is the reaſon it will not be ſeen at *London.*

Of the ECLIPSES *which will happen in the Year* 1731.

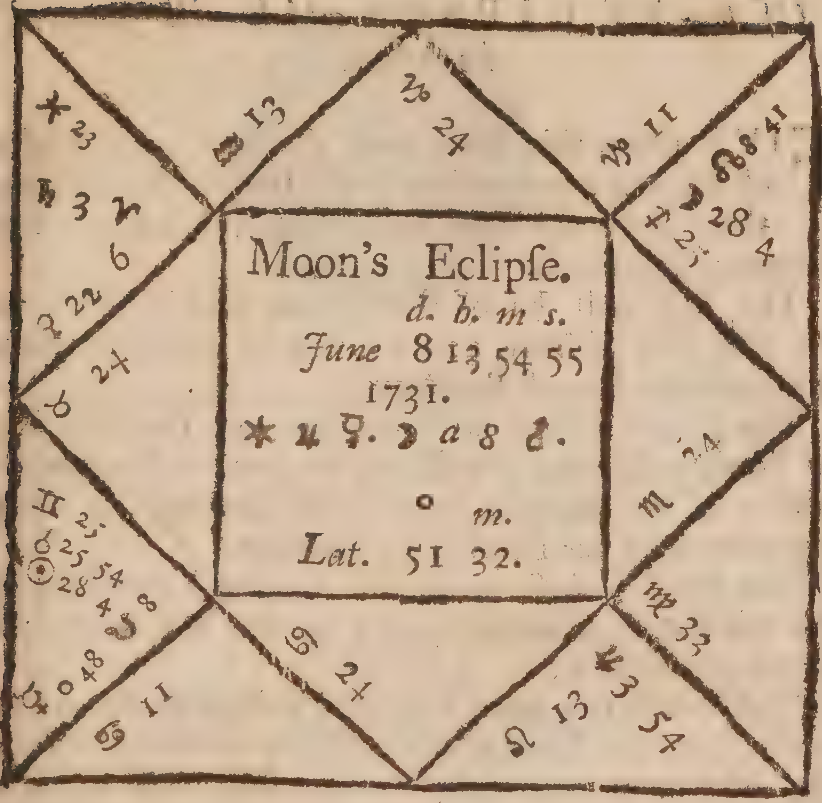
FOUR times to the Inhabitants of this Earthly Globe will the two great Lights of Heaven be deprived from their Sight; twice each Luminary.

The firſt is a partial and viſible Eclipſe of the *Moon*, on *Wedneſday* the 9th Day of *June*, in the Morning, according to the following Calculation.

Hence the apparent time at *London* of the

	d.	*h.*	*m.*	*s.*	
Beginning *June*	8	13	12	24	P. M.
True Ecliptick ☍		13	46	40	
Middle		13	54	55	
End of the Eclipſe		14	37	26	
Total Duration		1	25	2	
Digits Eclipſed		10	52	0	

This



This is a ſmall Eclipſe, therefore the Effects can-
ot be great; it falls in the laſt face of *Sagittarius*,
nd in the 8th Houſe, juſt paſt the Oppoſition of
lars in the 2d Houſe. This ſtirs up whimſical Acti-
ns among Men, and detriment to Horſes and Mules.

The ſecond will be a ſolar Defect, on the 23d Day of
une, at five in the Morning. It will not be ſeen at
ondon, but ſuch as Sail in the *Mediterranean* will
e the ſame Darkneſs on the lower ſide of the *Sun*'s
ody; it falls in 11 deg. of *Cancer*.

The third is of the *Moon*, and inviſible, on the
Day of *December*, a quarter before 11 a Clock be-
re Noon. This fall in 6 deg. of *Sagittarius*.

The fourth and laſt Eclipſe is an Inviſible one of the
n, on the 18th Day of *December*, at 1 in the Morn-
g. This happeneth in 6 deg. of *Capricorn*.

Of

Of the ECLIPSES *which will happen in* 1732.

FIVE times this Year will the two great Light of Heaven come within the Ecliptick Boundaries three times the *Sun*, and twice the *Moon* ; the happen as followeth.

The firſt will be of the *Moon*, and inviſible, o the 28th Day of *May*, at 2 a Clock in the Afternoon it falls in 17 deg. of *Sagittarius*.

The ſecond Eclipſe is of the *Sun*, on the 11th da of *June*, at Noon; it will not be ſeen at *London*, b reaſon of the Moon's great South Latitude, it bein augmented by her Parallax in Latitude.

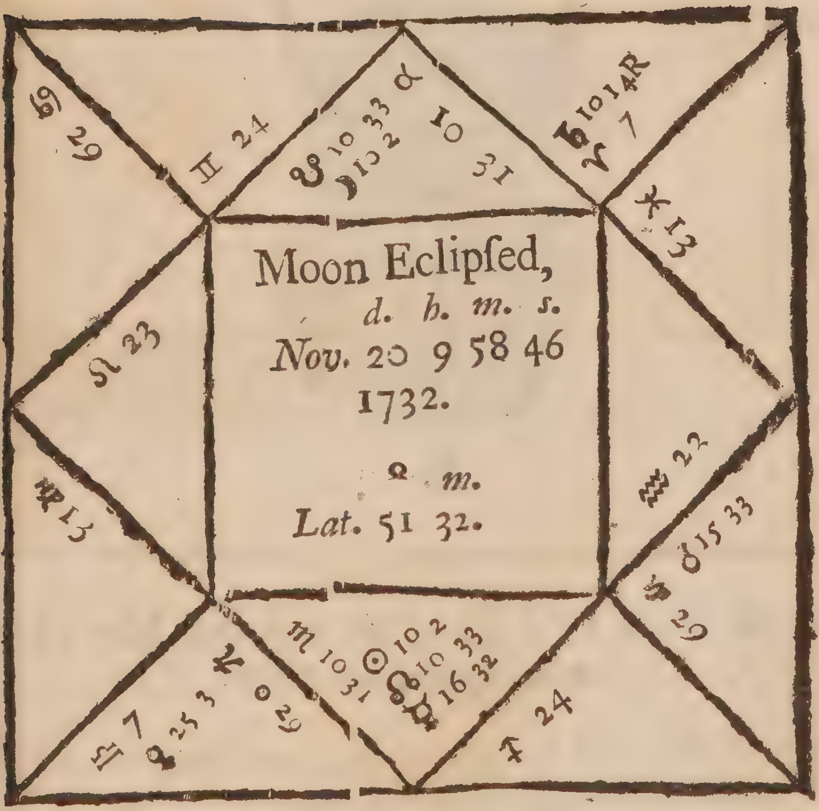
The third Eclipſe is of the *Sun*, and inviſible, o the 6th day of *November*, at 4 in the Afternoon ; i falls in 25 deg. ♏.

The fourth is a great and total Eclipſe of the *Moon* and viſible, on *Monday* the 20th day of *November*, i the Afternoon, according to the following Calculation.

Hence the apparent time at *London* of the

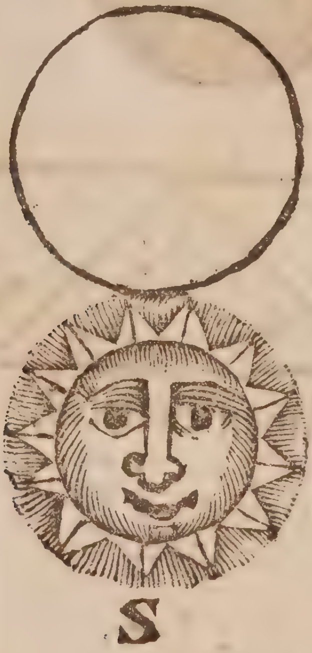
	d.	h.	m.	s.	
Beginning *November*	20	8	13	6	
Beginning of total darkneſs		9	11	25	
True Ecliptick ☍		9	58	21	
Middle		9	58	46	
End of total darkneſs		10	46	7	P. M.
Full End of the Eclipſe		11	44	26	
Continuance total darkneſs		1	34	42	
Total duration		3	31	20	
Digits Eclipſed		20°	48	0	

The Type.



This Defect falls in the 10th Houſe, in Oppoſition to *Mercury*, who is Lord of the Eclipſe; the Effects of this fall on great Men, excites them to much Subtility and Policy in all their Undertakings; it denotes tempeſtuous Winds, Shipwrack, &c. Schiſms, &c. in Religion.

The fifth and laſt Eclipſe is of the *Sun*, on the 6t of *December*, at 9 in the Morning; it is ſo very ſma at *London*, that 'tis not worth your while to take Notice of it, for the lower part of the *Moon*, will bu juſt touch the *Sun*'s upper Limb; ſo I ſhall not troubl you with any further Account of it; only view th Type, which will be thus.



Of the ECLIPSES *of the* Sun *and* Moon *that will happen in* 1733.

THERE will be four Eclipſes this Year, two of the *Sun*, and as many of the *Moon*.

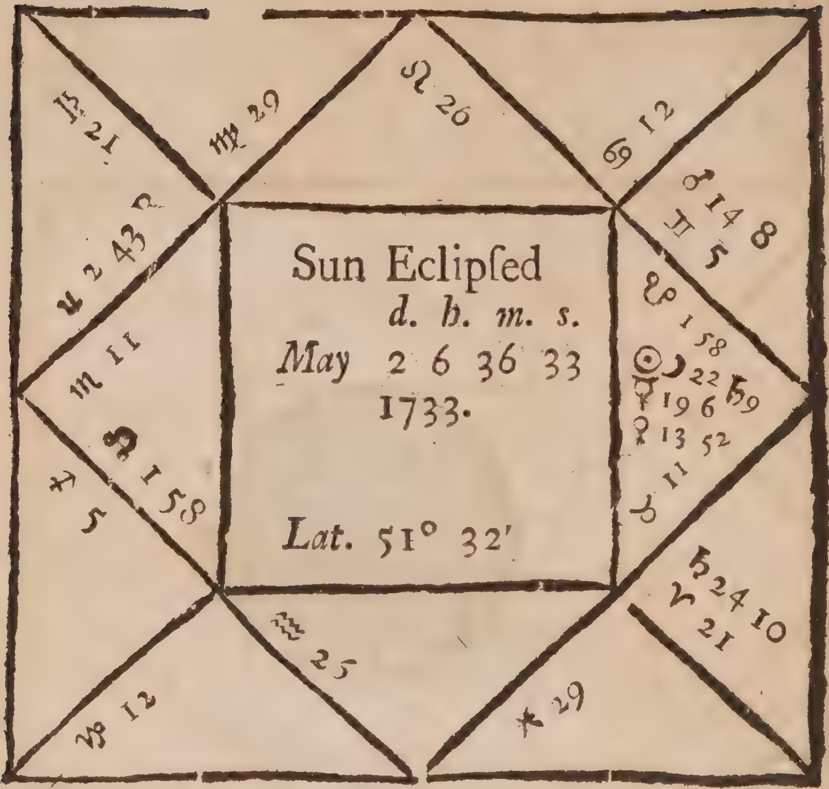
The firſt will be a great and viſible Eclipſe of the *Sun*, on *Wedneſday* the 2d day of *May*, in the Afternoon.

Hence

		d.	h.	m.	s.	
Hence the apparent time at *London* of the	Beginning *May*	2	5	42	5	P. M.
	Viſible ♉		6	35	39	
	Middle		6	36	33	
	End of the Eclipſe		7	27	26	
	Total Duration		1	45	21	
	Digits Eclipſed		9°	20	0	

The Type.

The Effects of this Eclipſe fall on the Common ſort of People, Oxen, *&c.* to Women with Child, and Travellers.



The ſecond Eclipſe is of the *Moon*, and, if the Air be clear, will be part viſible on *Thurſday* the 17th day of *May*, in the Afternoon, according to the following Calculation.

Hence the apparent time at *London* of the

		d.	h.	m.	s.	
Beginning	*May*	17	5	25	29	P. M.
Middle			6	56	26	
True Ecliptick ☍			7	2	20	
End of the Eclipſe			8	27	23	
Total duration			3	1	54	
Digits Eclipſed are			8°	25	0	

The greateſt part of the Darkneſs is over e'er the Moon Riſeth, therefore I ſhall omit the Type and Face of Heaven at the middle thereof, and only give you her Appearance at her Riſing, which will be thus.

The third Eclipſe is of the *Sun*, and inviſible, on the 26th day of *October*, near 5 in the Afternoon; it falls in 14 deg. of *Scorpio*.

The fourth and laſt is an inviſible Eclipſe of the *Moon*, on the 10th of *November*, at 1 in the Afternoon. This falls in 29 deg. of *Taurus*.

Of the ECLIPSES *which will happen in the Year* 1734.

ONly two Eclipſes this Year, and both of the Sun Inviſible; the firſt is on the 22d day of *April*, at 10 in Morning, in 12 deg. of *Taurus*.

And the other is on the 15th day of *October*, near 7 at Night. This is made in 3 deg. of *Scorpio*.

Of the ECLIPSES *of the* Sun *and* Moon *that will happen in* 1735.

THERE will be four Eclipſes this Year of the *Sun* and *Moon*, two of each Luminary: They happen in the following Order.

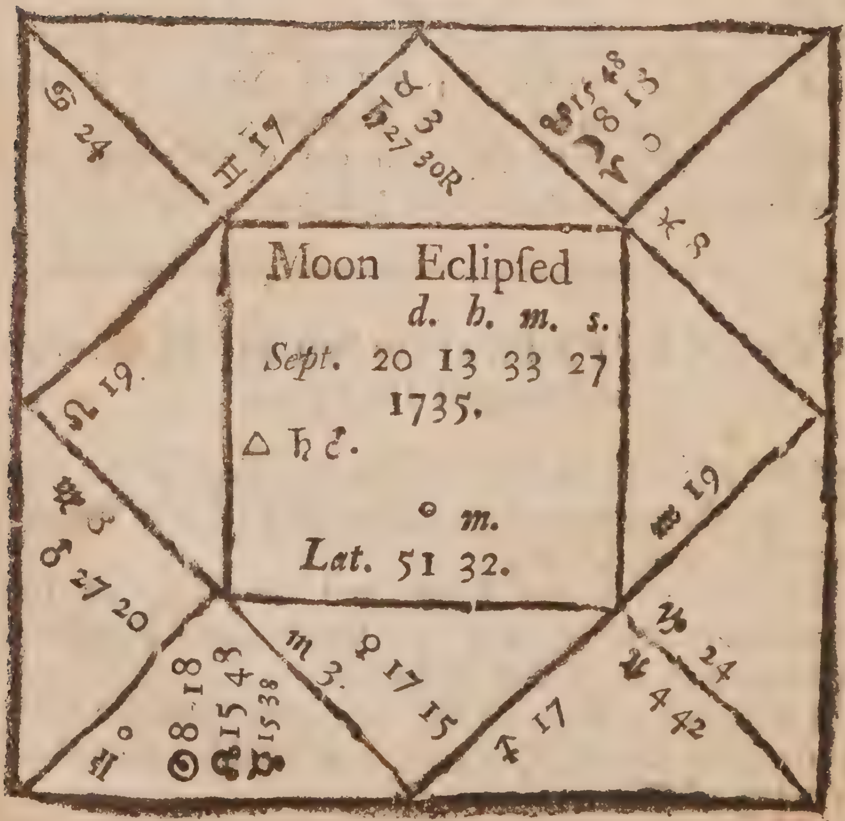
The firſt is of the *Moon*, and inviſible, on the 27th day of *March*, near 11 a Clock in the Forenoon. It happeneth in 17 deg. of *Libra*.

The ſecond will be of the *Sun*, and inviſible alſo, on the 11th day of *April*, at 11 at Night. This falls in 2 deg. of *Taurus*.

The third will be a partial and viſible Eclipſe of the *Moon*, on *Sunday* the 21ſt day of *September* in the Morning, as followeth.

Hence the apparent time at *London* of the		d.	h.	m.	s.	
	Beginning *September*	20	12	16	19	P. M.
	True Ecliptick ☍		13	26	32	
	Middle		13	33	27	
	End of the Eclipſe		14	50	35	
	Total Duration		2	34	16	
	Digits Eclipſed		5°	37	0	

The Type.



This Eclipſe falls in the 9th Houſe in *Aries*; the Effects are likely to fall on Churchmen and Travelers beyond Sea; *Mars* is Lord of the Eclipſe, and he ſtirs up bold, reſolute, confident and violent Actions on the Stage of the World. This falls in *Eng-and's* Aſcendant.

The fourth and laſt Eclipſe this Year is of the *Sun*, and inviſible, on the 5th day of *October*, at 2 a Clock in the Morning; it falls in 22 deg. of *Libra.*

Of the ECLIPSES *which will happen this Year,* 1736.

IN this Year, 1736. there will be ſix Eclipſes, four of the *Sun* Inviſible, and two great and total Eclipſes of the *Moon* viſible. They happen in the following Order.

The firſt will be a ſmall Eclipſe of the *Sun*, on the ſt Day of *March*, 36 min. paſt 2 in the Afternoon; it will only be ſeen in the Northern parts of the World.

The ſecond is a great and total Eclipſe of the *Moon*, and viſible at *London* if the Air be clear, on *Monday* the 15th Day of *March*, at Night, according to the ollowing Calculation.

	d.	h.	m.	s.
Equal time of the true Oppoſition at *London*, *March*	15	11	49	26
Mean Anomaly *Sun*	8	26	36	19
Mean Anomaly *Moon*	7	2	25	11
Place of the *Sun* from the Earth	♈	6	36	11
Place of the *Moon* in her Orbit	♎	6	36	11
North Node ſubtract	♎	6	26	26
Argument Latitude	0	0	9	45
True Latitude ☽ North Aſcending				51
Reduction ſubtract				2
Time of Reduction add				3
Correct time true Ecliptick ☍ *March*	15	11	49	29

Equation

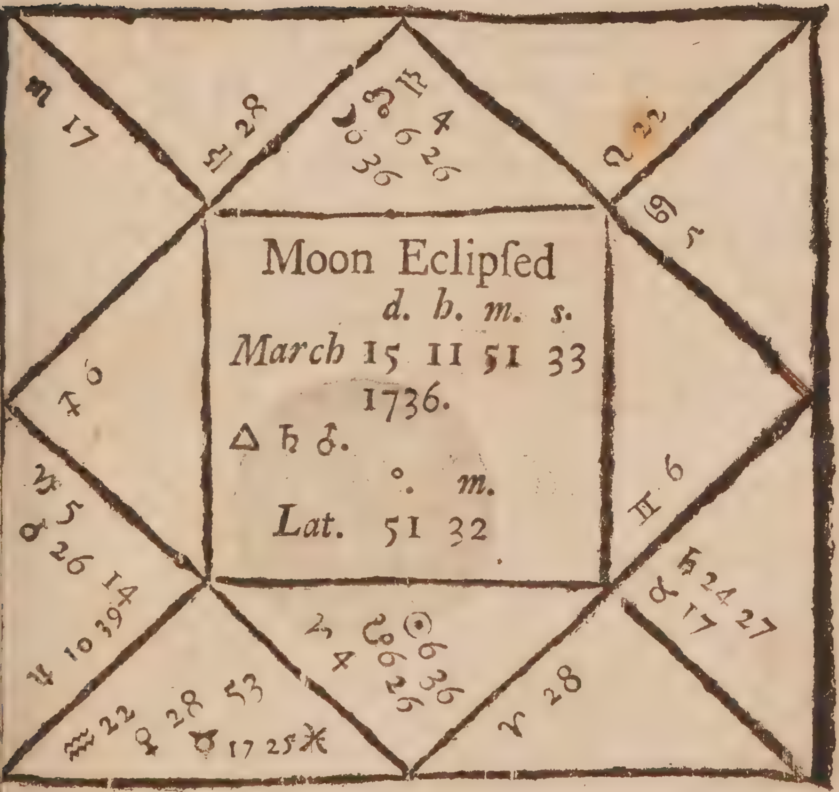
	d.	*h.*	*m.*	*s*
Equation of Time add			2	11
Apparent time true Ecliptick ☍	15	11	51	40
Hourly Motion *Sun*			2	28
Hourly Motion *Moon*			37	18
Hourly Motion ☽ *a* ☉			34	50
Sum, Horizontal Parallax ☉ *a* ☽			60	35
Semidiameter ☉ ſubtract			16	17
Reſt Apparent Semidiameter Earth's ſhadow			44	18
Semidiameter ☽ add			16	33
Sum			60	51
Latitude ☽ ſubtract			0	51
Reſt Scruples deficient			60	0
Scruples of Incidence			60	50
Time of Incidence, or half duration, ſubtract and add		1	44	48
Scruples of half continuance in total darkneſs			27	44
Time of half continuance in total darkneſs			47	47
Interval of ☍ and greateſt darkneſs ſubtract				7

Hence the apparent time at *London* of the

		d.	*h.*	*m.*	*s.*	
Beginning	*March*	15	10	6	45	
Beginning of total darkneſs			11	3	46	
Middle			11	51	33	
True Ecliptic ☍			11	51	40	
End of total darkneſs			12	39	20	P.M.
Full End of Eclipſe			13	36	21	
Continuance total darkneſs			1	35	34	
Total duration			3	29	36	
Digits Eclipſed			21°	45	0	

		m.	*s.*	
Lat. ☽ at	Beginning	4	49	South Deſcending.
	End	6	32	North Aſcending.

The Type.



This Eclipſe falls in the 10th Houſe; it denotes the eath of great and noble Men, a ſickly Air, with Tem- eſtuous Storms of Hail.

The third is an inviſible Eclipſe of the *Sun*, on the 1ſt of *March*, at 7 a Clock in the Morning. This ill only be ſeen in the Southern parts of the World. t falls in 21 deg. of *Aries*.

The fourth Eclipſe is of the *Sun* alſo, on the 25t of *Auguſt*, at 9 in the Morning. This falls in 1 deg. of *Virgo*, and is only viſible in the Souther parts of the World.

The fifth is a great and viſible Eclipſe of the *Moo* on *Thurſday September* the 9th Day, in the Morning, according to the following Calculation.

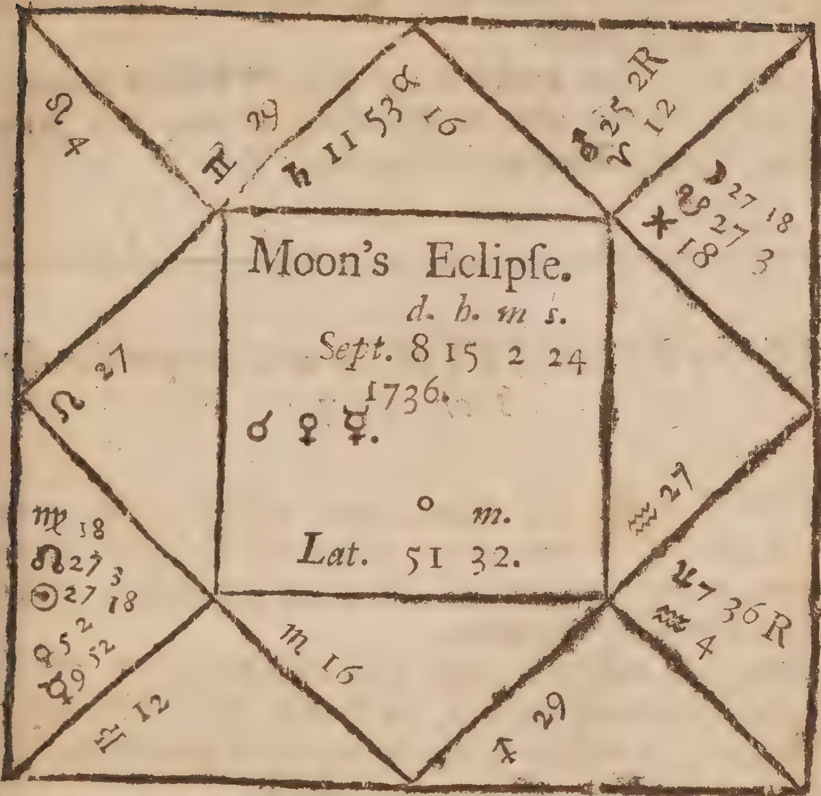
Hence the apparent time at *London* of the

	d.	h.	m.	s.
Beginning *September*	8	13	7	30
Beginning of total darkneſs		14	12	59
Middle		15	2	24
True Ecliptick ☍		15	2	40
End of total darkneſs		15	51	49
Full End of the Eclipſe		16	57	18
Continuance total darkneſs		1	38	50
Total duration		3	49	48
Digits Eclipſed		20°	32	0

P. M.

The Type.

Thi



This Eclipſe falls in the 8th Houſe, and in the 27th deg. of *Piſces*; And Authors ſay, that ſuch an Eclipſe as this is ſignifies Seditions, Cruel and inhumane Actions of Soldiers, Sea-fights, and Death of Fiſh. But *Jupiter* is Lord of the Eclipſe in the 6th Houſe, Retrograde, ſtirs up many falſe and treacherous Actions amongſt Servants, cauſeth Diſtempers amongſt the ſmaller ſort of Cattel, as Hoggs, Sheep, &c. *Mars* in the 9th Retrograde, diſturbs the Seas with Pyrates, Shipwrack, and cauſeth bad Succeſs in Navigations. *Saturn* in the 10th, brings Sorrow on ſome Prince, if not a Summons to his long home.

The Places likely to be concern'd in the Effects of this Eclipſe, are *Portugal*, *Cilicia*, *Ægypt* the higher, *Phazonia*, *Nazomenitidis*, *Garamantis*, *Lydia*, *Pamphilia*, *Calabria*, *Luſitania*.

Cities or Towns, *Alexandria*, *Compoſtella*, *Sibilia*, or *Hyſpalis*, *Parantium*, *Rotomagum*, *Normatia*, *Worms*, *Ratisporia*.

And the Places under the 8 Sign ♍ will be concerned in the Effects, alſo as *Babylon*, *Athens*, &c. *Jeruſalem*, *Paris*, *Reading* in *England*, &c.

Of the ECLIPSES *which will happen in the Year*, 1737.

FOUR times this Year, 1737. will the two great Lights of Heaven come within the Ecliptick Boundaries, twice the *Sun* and as often the *Moon*, which fall in the following order.

The firſt will be a great and viſible Eclipſe of the greater *Luminary* the *Sun*, on *Friday* the 18th day of *February*, according to the following Calculation.

In the Meridian of *London*, *Anno* 1737. *February*	*d.*	*h.*	*m.*	*s.*
Middle time true ☌	18	1	6	31
Mean Anomaly ☉	8	1	18	39
Mean Anomaly ☽	10	29	13	53
Longitude of the ☉ and ☽	♓	10	58	26
North Node ſubſtract	5	18	28	43
Argument Latitude	5	22	29	43
Moon's true Latitude North Deſcending			39	8
Reduction add			1	41
Ecliptick place *Moon*	11	11	0	7
Hourly Motion ☽ *a* ☉			27	38
Time of Reduction ſubtract			3	39
True Ecliptic ☌ *February*	18	2	2	52
Equation of Time ſubtract			5	54
Apparent time true Ecliptick ☌	18	1	56	58
Sun's true place	♓	10	58	17
Sun's Right Aſcenſion		342	27	0
Apparent time from Noon add		29	14	30

Sum,

	d.	h.	m.	s.
Sum, Right Aſc. M. Cœli		371	41	30
Complement		11	41	30
Medium Cœli in Ecliptick	♈	12	43	0
Declination Culminat. point		5	2	0
Meridian Angle		67	1	0
Altitude Equator at *London*		38	28	0
Altitude Midheaven		43	30	0
Altitude Nonageſſima		48	6	0
Diſtance Midheaven *a* Nonageſſima		22	22	0
Nonageſſima degree	♉	5	5	0
Diſtance ☉ *a* Nonageſſima	1	24	6	43
Horizontal Parallax ☽ *a* ☉			52	53
Parallax Longitude ☽ *a* ☉			31	56
Parallax Latitude ☽ *a* ☉			35	18

At 1 hour after true ☌ *February*	18	2	56	58
Sun's place is	♓	11	0	47
Sun's Right Aſcenſion		342	30	0
Apparent time from Noon add		44	14	30
Sum, Right Aſcenſion Medium Cœli		386	44	30
Complement		26	44	30
Medium Cœli in Ecliptick	♈	28	47	0
Declination Culmit. point		11	5	0
Meridian Angle		69	9	0
Altitude Equator at *London*		38	28	0
Altitude Midheaven		49	33	0
Altitude Nonageſſima		52	41	0
Diſtance Midheaven *a* Nonageſſima		16	53	0
Nonageſſima Degree	♉	15	40	0
Diſtance ☉ *a* Nonageſſima dr.	2	4	39	13
Horizontal Parallax ☽ *a* ☉			52	52
Parallax Longitude ☽ *a* ☉			38	0
Parallax of Latitude ☽ *a* ☉			32	3
Hourly Motion ☽ *a* ☉			27	36
Difference Parallax Longitude ☽ *a* ☉	ſubtract		6	4
Viſible hourly Motion ☽ *a* ☉.			21	32

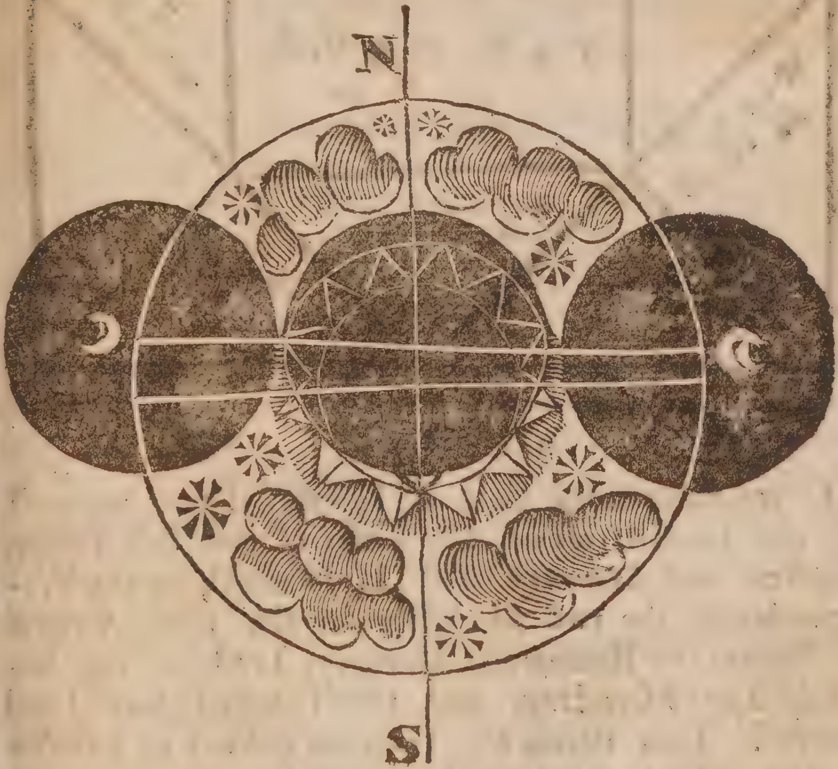
	d.	*h.*	*m.*	*s.*
Interval between true and viſible ☌ add		1	28	59
Viſible ☌ is 1737. *February*	18	3	25	57
Sun's place	♓	11	1	59
Sun's Right Aſcenſion		342	30	0
Apparent time *a* Noon add		51	29	15
Sum, Right Aſcenſion M. C.		393	59	15
Complement		33	59	15
Medium Cœli in Ecliptic	♉	6	19	0
Declination Culmit. Point N.		13	39	0
Meridian Angle		70	41	0
Altitude Equator at *London*		38	28	0
Altitude Midheaven		52	7	0
Altitude Nonageſſima		54	35	0
Diſtance Midheaven *a* Nonageſſima ad.		14	26	0
Nonageſſima Degree	♉	20	45	0
Diſtance ☉ *a* Nonageſſima W.	2	9	43	1
Horizontal Parallax ☽ *a* ☉			52	52
Parallax of Longitude ☽ *a* ☉			40	25
Diſtance ☉ *a* ☽			40	25
Parallax Latitude ☽ *a* ☉			30	38
True Latitude Moon North Deſcending			35	19
Viſible Latitude North Aſcending			4	41
Semidiameter ☉			16	23
Semidiameter ☽			14	56
Sum Semidiameters			31	19
Viſible Latitude ☽ ſubtract			4	41
Reſt Scruples deficient			26	38
Digits Eclipſed are		9°	45	0
Scruples of Incidence			30	58
Time of Incidence ſubtract		1	23	38
Time Repletion add		1	17	51
Interval between viſible and greateſt darkneſs, ſubtract			1	2

Hence

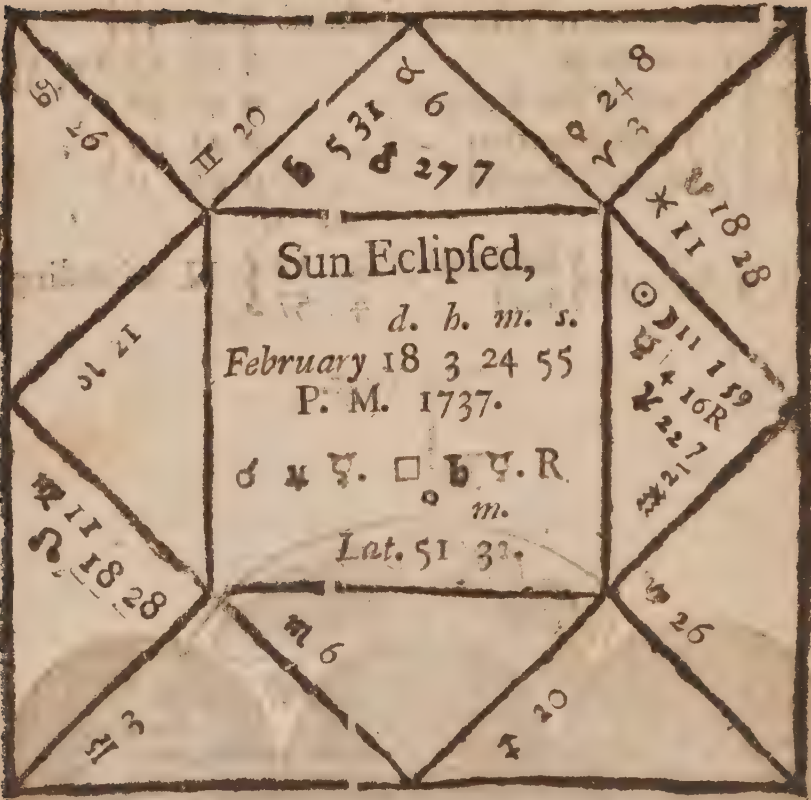
		d.	h.	m.	s.	
Hence the apparent time at *London* of the	Beginning *February*	18	2	1	17	P. M.
	Middle or greateſt darkneſs		3	24	55	
	Viſible ☌		3	25	57	
	End of the Eclipſe		4	42	46	
	Total Duration		2	41	29	
	Digits Eclipſed		9	45	0	

		m.	s.	
Lat. ☽ ſeen at	Beginning	3	13	N. Aſcending.
	End	4	57	

The Type.



It



If you obſerve the Face of Heaven above, you will ſee the Luminaries on the Cuſp of the 8th Houſe, *Jupiter* and *Mercury* cloſe in Council, in the Weſtern-Angle, the two *Maleficks* in the 10th, *Saturn* in Square to Retrograde *Mercury*, Lord of the Second, *Leo* Aſcending, and the Eclipſed *Sun* Lord thereof. Thus ſtands the Heavens poſited at *London* at the middle time of this great Eclipſe, of which *Jupiter* is principal Ruler, *viz.* of the Houſe, Term, Decanate or Face; where he produces all things plentiful for the uſe of Mankind, but *Mercury* in Conjunction Retrograde, and under the *Sun*'s Beams, denotes the Perſons ſignified by *Jupiter* to be of high Minds, lofty Diſpoſitions, aiming at things out of their reach; it ſignifies the Death of many of them, Earthquakes, and Miſchief to Fiſh: But this is to be noted, it affects ſuch as have *Jupiter* in their Aſcendant, or *Medium Cœli* ; I ſay, 'tis thoſe that will feel the Influence of this Eclipſe: And as to the duration of its Effects, it will be two Years and nine Months, which takes date the very Day the Eclipſe happens.

Jupiter and *Mercury* are Oriental of the *Sun* ; *Saturn*, Mars and *Venus* Occidental, and after the Sun is ſet, *Venus* may be ſeen Weſtward, ſhe is now diſtant from him 43 deg. *Saturn* and *Mars* may be ſeen at the ſame time more to the South. The Places ſubject to the Effects of this Eclipſe, are *Portugal*, *Galitia*, *Cilicia*, *Egypt* the higher, *Nazomontidis*, *Garamatis*, *Lydia*, *Pamphilia*, *Calabria*, *Normandia*, *Luſitania.*

Cities and Towns, *Alexandria*, *Compoſtella*, *Sibilia*, or *Hyſpalis*, *Worms*, &c.

And the Harp and the Viol, the Tabret and Pipe, and Wine are in their Feaſt, but they regard not the Works of the Lord, neither conſider the Operation of his Hands, Iſaiah 5. 12.

The ſecond Eclipſe this Year is of the leſſer Luminary, the *Moon*, and inviſible; It happeneth on *Saturday* the 5th day of *March*, 35 min. paſt Noon, in 26 deg. of the *Cœleſtial Virgin* ; 'tis but a ſmall Eclipſe, where our *Antipodes* may behold about one third of the *Moon's* Diameter, dark on the South or lower Side.

The third will be a Solar *Deliquium*, on Monday the 15th day of *Auguſt*, at 1 a Clock in the Morning, but it cannot be ſeen of us, becauſe the Meridian thereof is ſo far removed to the Eaſtward, and therefore it may be ſeen in *Eaſt-India*, in *Java* the great and leſs, and in the Oriental Kingdom of *Bangala.*

The fourth and laſt Eclipſe this Year is of the Moon, and viſible at *London* (if Clouds interpoſe not) on *Monday* the 29th day of *Auguſt* in the Morning, as followeth.

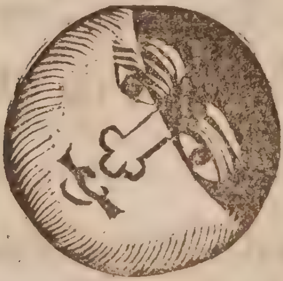
Hence

			d.	*h.*	*m.*	*s.*	
Hence the apparent time at *London* of the	Beginning	*Auguſt*	28	14	34	00	P. M
	Middle or great darkneſs			15	44	00	
	True Ecliptick *8*			15	52	00	
	End of the Eclipſe			16	54	00	
	Total duration			2	20	00	
	Digits Eclipſe are			4°	34	00	

		m.	*s.*	
Lat. ☽ at	Beginning	38	50	South Aſcending.
	End	45	2	

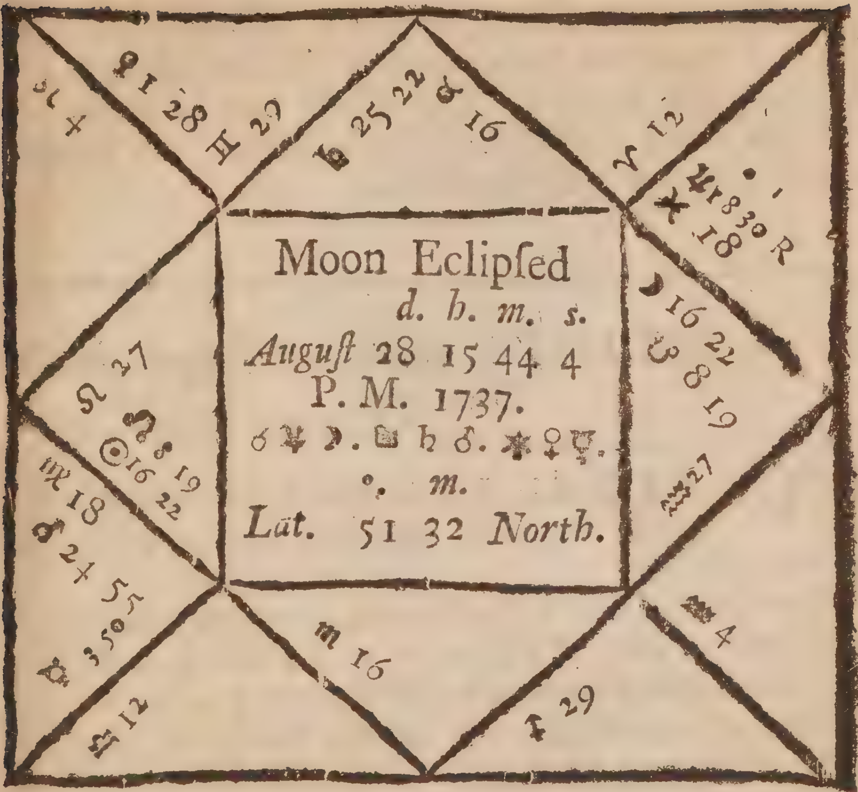
The greateſt Darkneſs will be thus.

The Type.



The Heavens will be poſited at *London*, at the middle of the Eclipſe, as the following Scheme ſheweth.

The



The Eclipſed *Moon* falls in 16 deg. of the Cœleſtial Fiſh, within the Bounds of the 8th Houſe, near the Body of Retrograde *Jupiter*, *Saturn* in the 10th, in ſquare to *Mars* in the 2d, where *Mercury* is alſo ſeated; *Venus* is our bright Morning-ſtar on the Cuſp of the 12th, no leſs than 44 deg. 55 min. diſtant from the *Sun*; *Leo* Aſcends, and *Sun* Lord thereof on the Cuſp of the 2d. This is the Face of Heaven, at the middle time of this Lunar *Deliquium*.

An Eclipſe of the *Moon* moves Subjects to Sedition, Servants to Diſobedience, and Wives to a diſorder againſt their Husbands, for which they are all made ſuffer for it. Here we have *Saturn*, *Jupiter* and *Mercury*, (*Saturn* is diſpoſed by *Mercury*, who Rules the Term) concerned in the Government of this Eclipſe, but *Jupiter* and *Mercury* moſt; which ſeems as it ſome Topping Gownſman were like to meet with a juſt Reward for his under-hand Dealing. For the Countries that are like to be paſſive under the Effects of this Eclipſe, ſee the account of the *Sun*'s Eclipſe in *February* laſt, *pag.* 71. The Effects hereof are like to continue about 10 Weeks; which brings me to the end of this Year's Obſervations.

Of the ECLIPSES *which will happen in the Year* 1738.

WITHIN this Year's Revolution there will be only two Solar Eclipſes; but one viſible in our Hemiſphere.

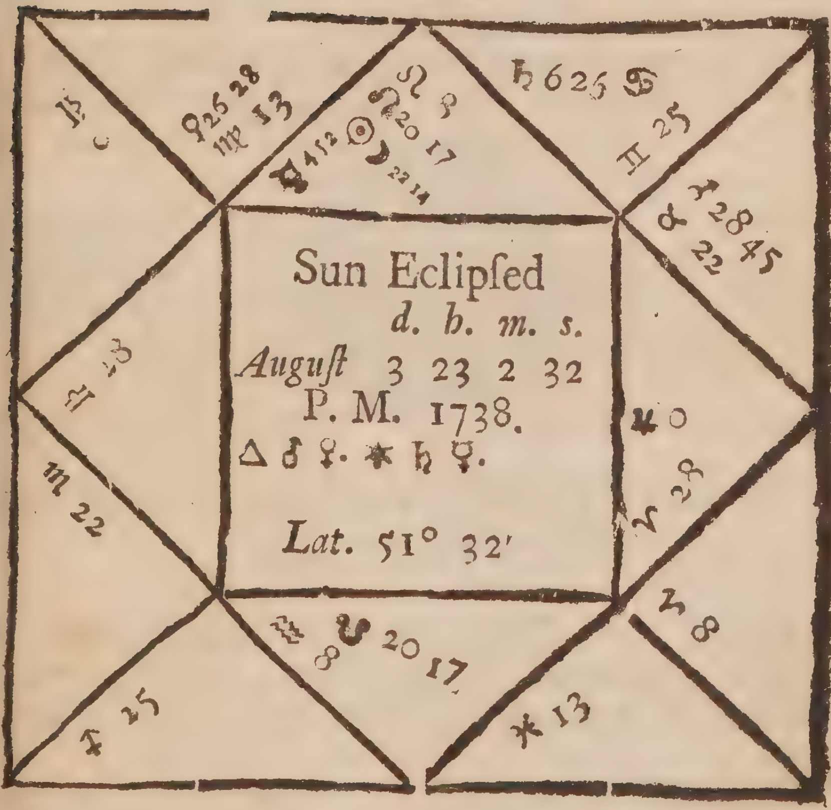
The firſt of theſe Solar Defects, happeneth on *Tueſday*, the 7th Day of *February*, at 6 a Clock at Night, the *Sun* ſets at *London* e're the Eclipſe begins, but in the more South-Weſt parts of the World it may be ſeen. It falls in the very beginning of *Piſces*; but becauſe it will not be viſible to us, I forbear to mention it further.

The other Solar Eclipſe will be on *Friday* the 4th Day of *Auguſt*, in the Forenoon, according to the following Calculation.

			d.	*h.*	*m.*	*s.*	
Hence the apparent time at *London* of the	Beginning	*Auguſt*	3	21	57	37	P. M.
	Viſible ☌			22	57	41	
	Middle or greateſt darkneſs			23	2	32	
	End of the Eclipſe		4	0	8	35	
	Total Duration			2	10	58	
	Digits Eclipſed			4	8	0	

			m.	*s.*	
Viſible Lat. ☽	ſeen at	Beginning	20	57	S. A.
		End	21	20	

The Type.



Sun Eclipſed
d. h. m. s.
Auguſt 3 23 2 32
P. M. 1738.
△ ♂ ♀. ✱ ♄ ☿.
Lat. 51° 32′

At the time of this Eclipſe, the two Superiors *Saturn* and *Jupiter* have lately paſſed their *Perichælions* (or, if you pleaſe, their *Perigæons*) and *Saturn* is juſt on the Station of his Retrogradation, in the 9th houſe, in Sextil to *Venus* in the tenth; *Libra* on the *Eaſtern finitor* and *Venus* Lady thereof, in the 11th, in △ to *Mars* in the 8th. *Sol* and *Jupiter* are chief Rulers in this Eclipſe; *Mars* may be ſaid to have ſome ſmall

Dominion by Ruling the Decanate, but his evil Deſign is mitigated, by being in △ to *Venus* in the 11th. Thus ſtand the Condition of the Heavens at the middle time of the Eclipſe, which falls in the Angle of Honour, and *Cardan* tells us, that *Sun* Eclipſed in the 10th houſe, does generally ſtir up Sedition, Tumults, Rebellions, *&c.* againſt Governours and Government, ſuch as Wars, Slaughters, Commotions, Captivities, and ſuch like Evils: The Places under the Eclipſed Sign, &c. are *Italy*, *Sicilia*, *Bohemia*, *Phœnicia*, the *Alps*, *Æmilia*, *Chaldea*, *Sabina*, *Togata*, *Crichomia*, and part of the *Ottoman Empire.*

Cities and Towns, *Briſtol* in *England*, *Prague*, *Linzinus*, *Damaſcus*, *Rome*, *Ravenna*, *Cremona*, *Ghent* in *Flanders*. The Effects of which will be felt to continue two Years and two Months.

Alſo thoſe Perſons who have 22 deg. or thereabouts, of *Leo* or *Aquaries* on their Aſcendants, or *Medium Cœli Sun* or *Moon*, will in ſome Meaſure feel the Effects thereof.

Of the ECLIPSES *of the* Sun *and* Moon *that will happen in* 1739.

FIVE times will the Luminaries be Eclipſed to us that Inhabit this Globe of Earth, three times the *Sun*, and twice the *Moon*, which fall in the following order.

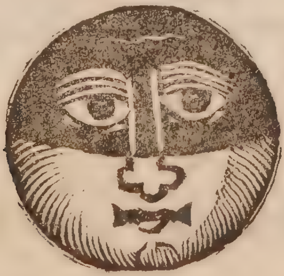
The firſt is a partial, and viſible Eclipſe of the *Moon*, on *Saturday* the 13th day of *January* at night, according to the following Calculation.

Hence the apparent time at *London* of the

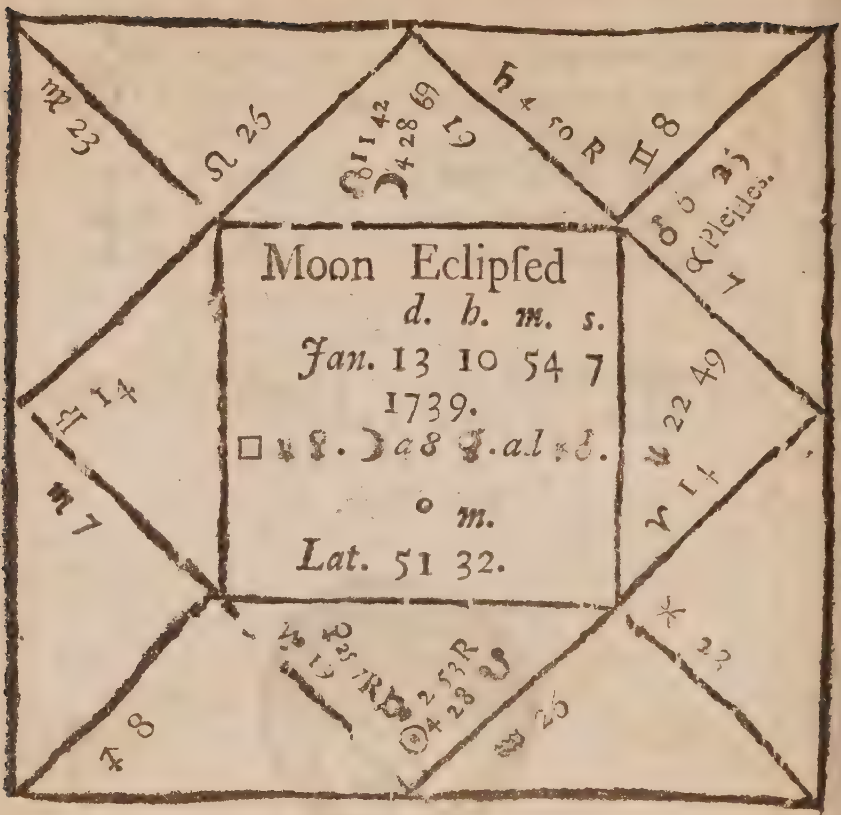
		d.	h.	m.	s.	
Beginning	*January*	13	9	32	56	P. M.
Middle or great darkneſs			10	47	21	
True Ecliptick 8			10	54	7	
End of the Eclipſe			12	15	18	
Total duration			2	42	22	
Digits Eclipſe are			6°	22	00	

Lat. ☽ at	m.	s.	
Beginning	40	21	South Deſcending.
End	33	13	

The Type.



In



In this Scheme there is no leſs than 3 of the ſeven Planets Retrograde; and the Eclipſe it ſelf falls in the *Medium Cœli*, and being in the firſt Face or Decanate of *Leo*, it denotes the Death of a mighty Prince, violent Miſchief, Cruelty and Toil, a ſcarcity of Corn and Fruits.

At the time of this Eclipſe caſt your Eye South South Weſt, and there you will ſee *Saturn* above the great *Dog*, and look a little more to the Weſt, you will ſee fiery *Mars* a little to the left of the ſeven Stars, near *Aldebrand*; and you may ſee *Jupiter* alſo at the ſame time near ſetting in the Weſt. The other three, *viz. Sol*, *Venus* and *Mercury*, are all in the *Imum Cœli*, and therefore not to be ſeen of us at *London*.

The ſecond Eclipſe this year is of the *Sun* Inviſible on *Sunday* the 28th day of *January*, at 4 a Clock in the Morning in 19 deg. of *Aquaries*, it will be but a ſmall

mall Eclipſe where moſt viſible, the *Moon* having reat South Latitude at that time.

The Third Eclipſe is of the *Moon*, and Inviſible alſo, t happeneth on *Monday* the 9th day of *July*, 18 min. aſt 4 in the Afternoon, it falls in 27 deg. of the Cœ- eſtial *Goat*.

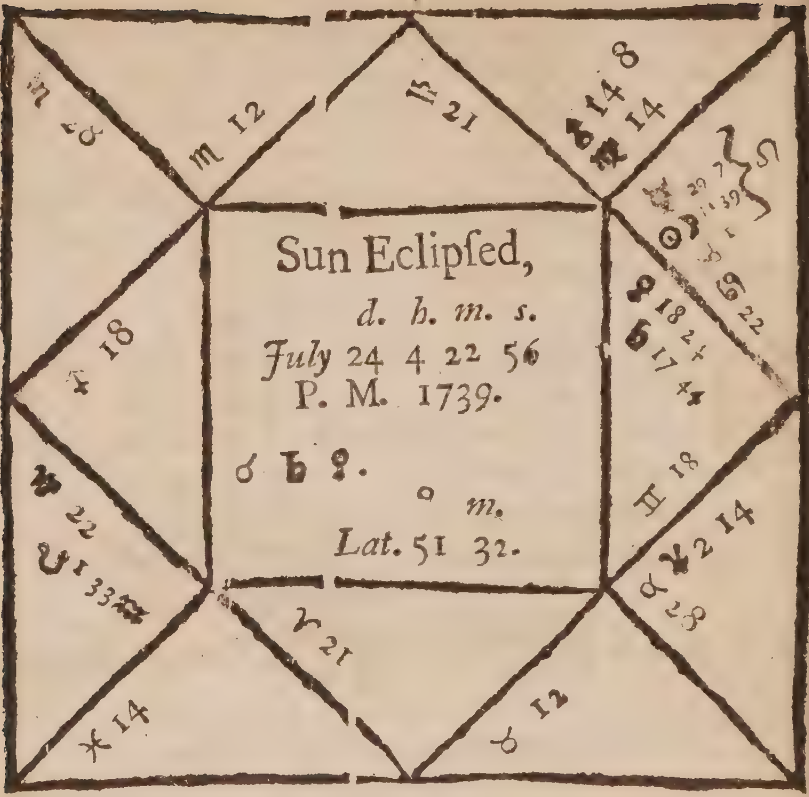
The Fourth is of the *Sun* and viſible, on *Tueſday* he 24th day of *July* in the Afternoon, according to he following Calculation.

Hence the apparent time at *London* of the

	d.	h.	m.	s.	
Beginning 1739. *July*	24	3	10	56	P. M.
Viſible ☌		4	20	34	
Middle, or great darkneſs		4	22	56	
End of Eclipſe		5	29	20	
Total duration		2	18	24	
Digits Eclipſed are		7°	6	00	

		m.	s	
Lat. ☽ ſeen at	Beginning	13	11	North Deſcending.
	End	11	10	

The Type thereof will be thus.



In this Eclipſe all the Planets are direct in Motion, and the Eclipſe falls in the 8th houſe, *Mars* in the 9th, *Saturn* and *Venus* conjoyn'd in the 7th, *Jupiter* in the 6th, Lord of the Aſcendant; And thus are the Heavens poſited at the middle time of this Eclipſe, which, all conſidered together, brings Troubles to Princes and Magiſtrates, Wars, and Contentions about Religion; and *Saturn* in the 7th, creates many tedious Law-ſuits, and being in ☌ with *Venus* there, it denotes ſome young Lady to be deluded to the cold Embraces of ſome old Leacher; and *Mars* in the 9th, peſters the Seas with Pirates and Robbers. The Eclipſe in it ſelf will be very conſiderable, and well worth the obſervation of the Ingenious.

The Fifth and laſt Eclipſe this year, will be a ſmall one of the *Sun*, viſible on *Wedneſday* the 19th day of *December* in the Morning.

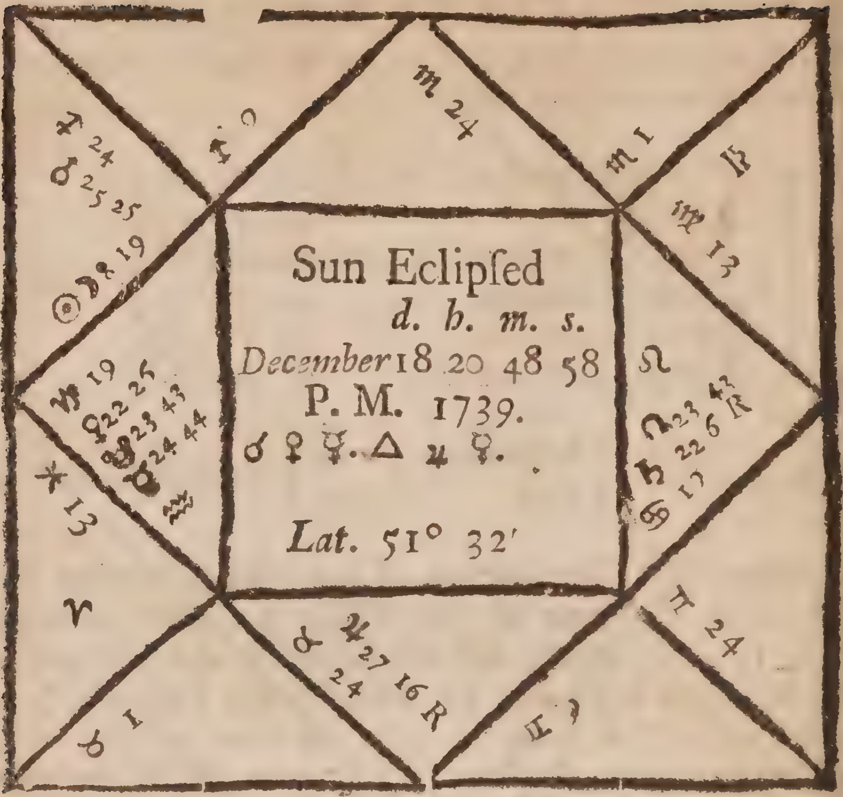
Hence the apparent time at *London* of the

	d.	h.	m.	s.	
Beginning 1739. *Dec.*	18	20	10	18	P. M.
Viſible ☌		20	45	43	
Middle, or great darkneſs		20	48	58	
End of Eclipſe		21	30	3	
Total duration		1	19	45	
Digits Eclipſed are		2°	10	00	

Lat. ☽ ſeen at		m.	s.	
	Beginning	30	54	North Deſcending.
	End	23	46	

Note, The Declination of the *Sun* anſwering his Place at the time of the viſible Conjunction is 23 deg. 14 min. South, and conſequently the difference of Aſcenſion is 32 deg. 42 min. (in the Latitude *London*) which in time is 2 h. 10 min. 48 ſec. this added to 6 hours, the Sum is 8 h. 10 min. 48 ſec. the time of *Sun* Riſing that Morning at *London*; and the Eclipſe begins the 19th in the Morning at 10 min. 18 ſec. paſt 8, ſo that the Eclipſe begins 30 ſec. before the *Sun* Riſeth; the Type thereof is thus.

The Type.



The two Superiors *Saturn* and *Jupiter* are both Retrograde, and both in Angles, *Saturn* is chief Lord of the Eclipſe, in his Detriment, we are like to expect hopeful things from him, for at the beſt he's but a Deceiver; the Eclipſed *Sun* is in a Cardinal Sign in the 12th houſe, and in the *Earthy Trigon*, it denotes Ruin and Deſtruction to Houſes and the Fruits of the Earth; alſo the Death of many young Men, (becauſe the Eclipſe begins in the Aſcendant) but here *Saturn* is chief Governour, and he ſignifies the Aged ſort, ſo that they muſt expect to feel the Influence thereof in ſome meaſure as well as the other. *Mars* in the 12th with the afflicted Luminaries, brings a Murraine or raging Diſtemper on all ſorts of great Cattle. Now as touching the Places where the Effects of this Eclipſe ſhall be manifeſt, they are all removed far from *England*, therefore not worth our preſent notice, only *Oxford*, in *England*, will feel the Influence thereof in ſome meaſure or other.

Of

Of the ECLIPSES *which will happen in the Year* 1740.

SIX times to the Inhabitants of this Terraqueous Globe, will the two great Lights of Heaven; come within the Ecliptic Boundaries, three times the greater Luminary the *Sun*, and as often the *Moon*; only two viſible at *London*: They happen in the following order.

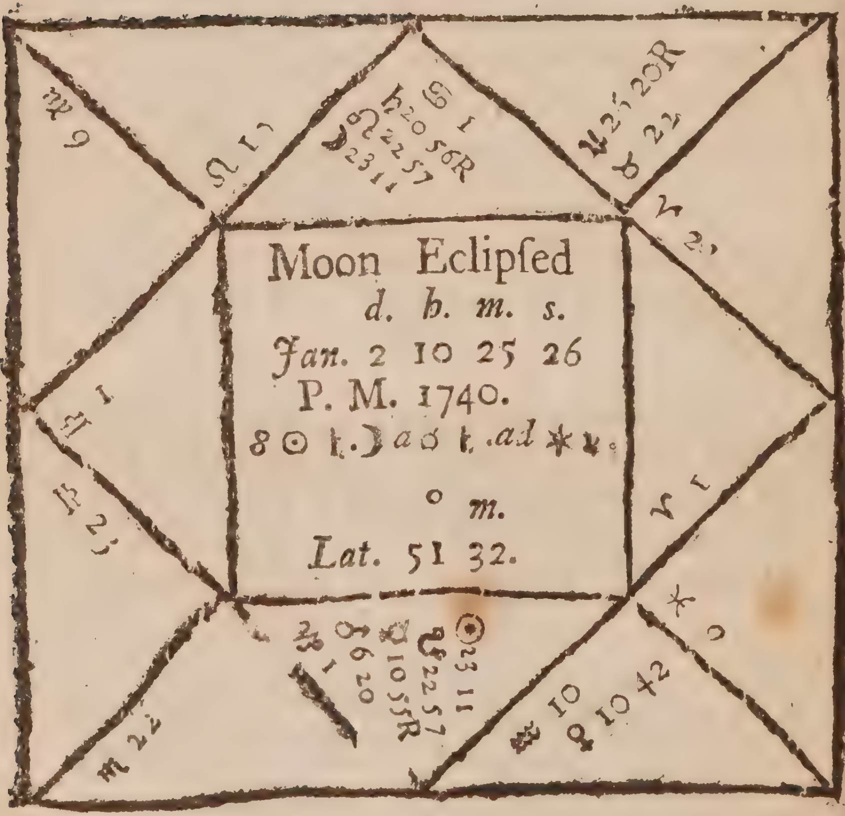
The firſt is a great and viſible Eclipſe of the *Moon*, (total with Continuance) on *Wedneſday* the 2d day of *January* at Night, according to the following Calculation.

Hence the apparent time at *London* of the

	d.	h.	m.	s.	
Beginning 1740. *January*	2	8	30	52	
Beginning total darkneſs		9	36	30	
Middle or great darkneſs		10	25	26	
True Ecliptic ☊		10	25	39	
End of the total darkneſs		11	14	22	P. M.
Full end of Eclipſe		12	20	00	
Continuance total darkneſs		1	37	52	
Continuance Eclipſe		3	49	8	
Digits Eclipſed are		20°	29	00	

		m.	s.	
Lat. ☽ at	Beginning	3	44	South Deſcending.
	End	6	10	North Aſcending.

A Type of this Eclipſe.



At the time of this Eclipſe, there is three Planets Retrograde, and the *Moon* begins firſt to touch the Earth's ſhadow, near the Cuſp of the 11th, and ends near the Cuſp of the ninth; the greateſt Darkneſs falls in 23 deg. of *Cancer*, a Tropical Sign, and of the Watery Triplicity; *Venus* governs the Term, *Luna* her ſelf is Lady of the Sign, and third Face; it falls in the houſe of Honour, near the Body of *Saturn.* This brings much Evil to great Ladies, and Women of mature Years, the Commonalty afflicted with Dropſical and other ſluggiſh Diſeaſes, over-ſwelling of the Sea, and Rivers by fits.

The Places under the Eclipſed Sign ♋, and the oppoſite thereto ♑, will in a great meaſure feel the Effects thereof; the Places ſubject to *Cancer*, are, *Scotland*, *Holland*, *Zealand*, *Granado*, and *Numidia*, *Africa*, *Carthage*, *Calchis*, the lower *Burgundy*.

Cities, *York*, St. *Andrews*, *Amſterdam*, *Venice*, *Lubeck*, *Genoa*, *Tunis*, *Conſtantinople.*

At the greateſt obſcuration of this Eclipſe, you may ſee *Saturn* a little to the Right of the *Moon*, near the Meridian, and more to the Weſtward *Jupiter* ſhineth very glorioufly; all the reſt of the Planets are under the Earth.

The Second Eclipſe this year will be on *Thurſday* the 17th day of *January*, at 8 a Clock at Night, it is of the *Sun*, and Inviſible; it falls in 8 deg. 20 min. of *Aquaries*; it will be but a ſmall Eclipſe, the *Moon* having great South Latitude at that time.

The Third Eclipſe is of the *Sun*, and Inviſible alſo; it happeneth on *Friday* the 13th day of *June*, at 2 a Clock in the Morning; this will be but ſmall where conſpicuous; it falls in 2 deg. 39 min. of *Cancer.*

The Fourth Eclipſe this year falls in 17 deg. 16 min. of ♑, of the *Moon*, Inviſible, on *Saturday* the 28th day of *June*, 23 min. paſt 9 in the Morning; near two thirds of the *Moon*'s Diameter will be obſcured on the North-ſide.

The Fifth Eclipſe is of the *Sun*, and Inviſible alſo, on *Sunday*, *December* 7. near 11 a Clock at Night; it falls in 27 deg. of *Sagittarius*; it will be viſible to our *Antipodes*, and well worth their obſerving.

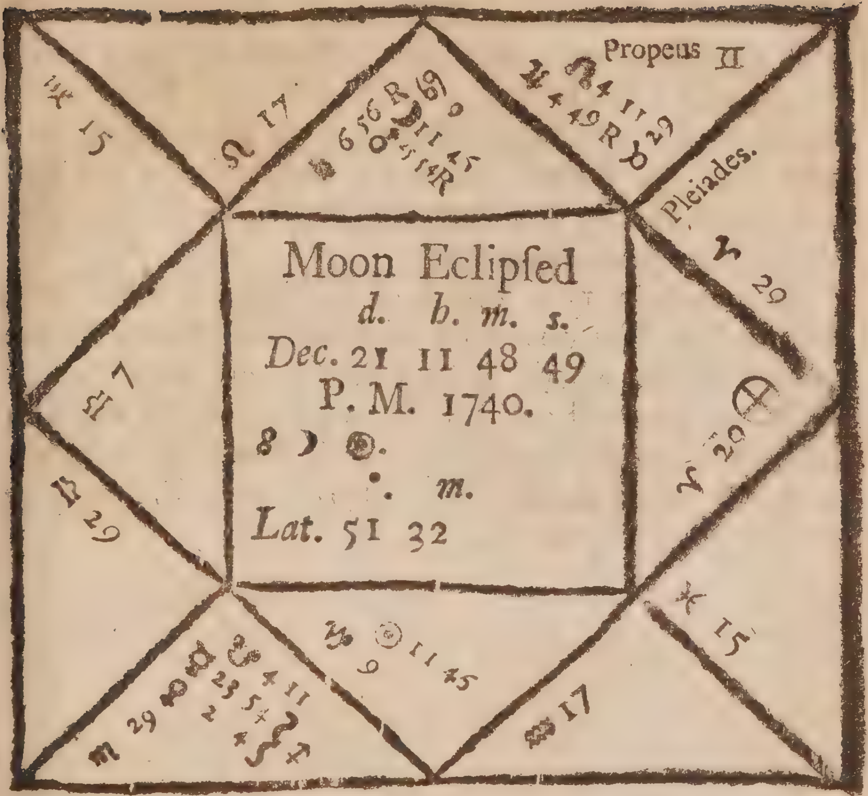
The Sixth and laſt is an Eclipſe of the *Moon*, and viſible at *London*, (if Clouds interpoſe not) on *Sunday* the 21ſt day of *December*, according to the following Calculation.

Hence the apparent time at *London* of the

		d.	h.	m.	s.	
Beginning	*December*	21	10	32	45	P. M.
Middle or great darkneſs			11	48	49	
True Ecliptick ☍			11	55	42	
End of the Eclipſe			13	4	43	
Total duration			2	32	8	
Digits Eclipſe are			5°	49	00	

Lat. ☽ at	m.	s.	
Beginning	36	00	North Aſcending.
End	43	1	

The Type.



All the Superior Planets are Retrograde, *Jupiter* in the 9th houſe, *Mars* and *Saturn* in the 10th to the left of the *Moon*; all three to be ſeen very Glorious at the time of the Eclipſe, not far diſtant from her. This Eclipſe falls in the Tropical Sign *Cancer*, in the *Medium Cœli*, where the *Moon* will loſe near half her Light on the lower ſide her Body, as the Type above plainly proveth; *Cancer* is a moveable Sign, and of the Watery Triplicity; *Jupiter* may be took for chief Ruler in this Eclipſe, he having two Places of Dignity in the Sign, but he's in a very poor Circumſtance, ſo not able to perform any good to thoſe ſignified by him: When *Jupiter* is ſtrong, and beareth principal Rule in an Eclipſe, he gives good things, and is the general ſignifier of Peace and Tranquillity; but here it is not ſo, for thoſe ſignified by him may expect juſt the contrary. This Eclipſe falls in the ſecond Decanate or Face of *Cancer*, and in the 10th houſe of Heaven, which ſignifies the Sea will be infeſted with *Pickaroons*, Merchants will ſuſtain much Loſs and Dammage in their Adventures, many Infirmities afflict the People; the People that Inhabit the Places under the Signs *Cancer* and *Capricorn*, will only feel the Effects thereof; which Places you will find mentioned in the foregoing Pages, ſo I ſhall forbear to mention them here.

To conclude this Work of Eclipſes, I ſhall here preſent the Curious with a Speculum drawn to the Scheme above, where, as in a Glaſs, you may ſee at one View how all the Aſpects are formed all through the 12 Cœleſtial Houſes, by which it will be eaſie for an Artiſt to do the like for all the other Eclipſes, or for any other Figure whatſoever.

ng. '	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	Lat. ° '
4	△		☍		△	□	✱		♀		✱	□	0 S 11
49	□	✱		☊ ♃		✱	□	△		☋ ☍		△	0 S 3
56	△ ⊖7	□	✱		♄		✱ Aſc	□	△		☍		0 N 35 190:
				MC						I C			100: 0
		△				△	□	✱				✱	
46	□	✱		☽		✱		△		☉		△	282:48
						D12						D 6	47 28
					D11						D 5		32 11
54	△		☍		△	□	✱		☿		✱	□	3 N 4
54 19	□	✱ Pli		♂		✱	□	△		☍		△	4 N 4 4 N 0
	D 8						D 2						47 28
		D 9						D 3					32 11

te, The firſt Column on the Left-hand, contains the Longitudes of the Planets,
the Degrees and Minutes of the Cuſps of the Houſes; the laſt, or Right-hand
nn, contains the Latitudes of the Planets; only againſt the Sun, is his Right
ſion: the Degrees and Minutes againſt the Cuſps of the Houſes, are the Ele-
of the Pole above each Circle of Poſition for the Latitude of *London*; againſt
edium Cœli is its Right Aſcenſion; and againſt the Aſcendant, is its Oblique
ſion.

Of the ECLIPSES *of the Sun and Moon that will happen* 1741.

IN this Year there will be only two Eclipſes, and both of the Sun, inviſible at *London*. The firſt will be on *Tueſday*, *June* 2. at 10 in the Forenoon; the Apparent Time of the true Ecliptic Conjunction is at 15′ 8″ paſt 10, and the viſible Conjunction is at 46′ 29″ paſt 9 the ſame Morning; but if then the Sun ſhine ever ſo bright, none of its Brightneſs will be obſcured from the Inhabitants, in the Parallel of *London*, as thus I prove.

	S.	°	′	″
Argument of Lat. at the Viſible ☌	11	26	23	15
True Lat. ☽ South Deſcending			18	53
Parallax Latitude ☽ à ☉ add			30	25
Sum, is the Viſible Latitude ☽ South			49	18
Semidiameter ☉			16	2
☽			16	0
Sum of their Semidiameters			32	2

Here, at this Time and Place, the viſible Latitude of the ☽ South, exceeds the Sum of the Semidiameters of the Sun and Moon, proves the Inviſibility of this Eclipſe at *London*; but in the more Southern Parts of the Earth it will be ſeen, as I thus prove.

		′	″
Horizontal Parallax ☽.		57	33
Of the ☉ Sub.			30
Remains the Semidiameter ⊖ Disk		57	3
Semidiameter of the Penumbra, add		32	2
Sum	1°	29	5
Moon's true Latitude at true ☌ S D.		17	13

Hence, becauſe the Semidiameters of the ⊖ Disk and Penumbra exceeds the Moon's true Latitude at the time of the true Conjunction, proves the Sun will be Eclipſed ſomewhere on the Earth: and, becauſe the true Latitude of the ☽ is leſs than the Semidiameter of the Earth's Disk, ſhews the ☉ will be centrally Eclipſed ſomewhere on the Earth at that time. Laſtly, becauſe the Difference between the Earth's Disk and Penumbra, is more than the ☽'s true Latitude, demonſtrates, that all the Penumbra will fall within the Earth's Disk.

The ſecond and laſt Eclipſe this Year, 1741, is of the Sun, and Inviſible at *London* alſo; it happens on *Friday*, *November* 27th, in the Morning, as followeth.

	D.	h.	'	"
Equal Time of the true ☌ 1741. *Nov.*	26	17	43	15
Equation of Time, add			8	40
Apparent Time at *London*	26	17	51	55
Mean Anomaly of ☉	5	8	52	0
Mean Anomaly of ☽	1	26	56	48
True Place of ☉ & ☽	♐	16	16	57
True Place of Latitude ☽ S. A.				33
Place of the ☽'s North Node	♊	16	10	39
Argument of Latitude	6	0	6	18
Horizontal Parallax of ☉				30
Horizontal Parallax of ☽			54	25
Semidiameter of Earth's Disk			53	55
Semidiameter of ☉			16	29
Semidiameter of ☽			15	12
Semidiameter of the Penumbra			31	41
Semidiameter of the Disk, add			53	55
Sum		1°	25	36

This Sum far exceeds the ☽'s Latitude, at the true time of the ☌, proves the Sun's will be Eclipſed at that time. And, becauſe the Difference between the Earth's Disk and Penumbra, exceeds the ☽'s true Latitude, proves the Eclipſe will both be Central; and alſo, that all the Penumbra will fall within the Disk.

	D.	h.	′.	″.
Sun's Declination South			22	48
Sun's Aſcenſional Difference			31	57
The ſame in Time is		2	7	48
Add		6	0	0
Sun riſes at *London* at		8	7	48

This proves the Eclipſe is under the Horizon of *London*, ſo cannot be ſeen there, but only in the South-Eaſt Parts of the World; for which reaſon I ſhall forbear giving any further account of it, at this time.

Of the ECLIPSES *that will happen in the Year* 1742.

Within the Circumference of this Year there will be four Eclipſes of the Luminaries, two of each Light, but all inviſible at *London*. They happen in the following order.

The firſt Eclipſe is of the Moon, on *Sunday* the 8th Day of *May*, in the Afternoon, as follows.

	D.	h.	′.	″.
Equal Time of the true ☍ 1742, *May*	8	2	35	38
Time of Reduction ſub.			4	31
Ecliptic ☍	8	2	31	7
Equation of Time add			3	55
Apparent Time Ecliptic ☍	8	2	35	2
Mean Anomaly of ☉	10	18	53	56
Mean Anomaly of ☽	0	18	17	45
Place of the Sun from the Earth	♉	28	18	53
Place of the Moon in her Orb	♏	28	18	53
North Node ſubtract	2	7	35	39
Argument of Latitude	5	20	43	14
Reduction add			2	4
Hourly Motion of ☉			2	24
Hourly Motion of ☽			29	50
Hourly Motion of ☽ *a* ☉			27	26

Sum

	D.	h.	′.	″.
Sum of the Horizontal Parallaxes			53	39
Semidiameter of the ☉ ſubtract			16	3
Apparent Semidiameter of the ⊖ Shadow			37	36
Semidiameter ☽ add			14	53
Sum			52	29
Latitude of ☽ ſub. N. D.			48	19
Scruples deficient			4	10
Digits eclipſed are		1°	40	46
Scruples of Incidence			20	29
Motion from true ☍ to the middle			4	6
Time of Incidence, or half Duration			44	48
Time from true ☍ to the middle add			8	58
Motion of ☉ in the time of Incidence			1	48
Argument Lat. at beginning	5	20	20	57
Argument Lat. at the End.	5	21	5	31

		′.	″.	
Lat. ☽ at	Beginning	50	13	North Deſcending.
	End	46	24	

Hence the apparent Time at *London* of the		D.	h.	′.	″.	
	Beginn. 1742, *May*	8	1	56	12	P. M.
	Ecliptic ☍		2	32	2	
	Middle		2	41	0	
	End of the Eclipſe		3	25	48	
	Total Duration.		1	29	36	

The Type.

This Eclipſe will not be ſeen at *London*, becauſe it is over long before the Moon riſes; but it will be viſible to all the Eaſt and South Parts of *Tartary*, to the *Mogul*'s Empire, *China*, and all the *Eaſt-India*

Iſlands, *Madagaſcar*, and to all the South Sea. The Moon is vertical a little to the Eaſt of *Hollandia-Nova*, the Land of *Van Diemens*, and at the Southern Pole; but to the South-Eaſt part of *Perſia* the Moon will riſe Eclipſed in the Eaſtern Horizon.

The Second Eclipſe is of the Sun, but Inviſible at *London*, by reaſon it falls ſo near Midnight; but it is a great Eclipſe of itſelf, as I thus prove.

	D.	h.	′.	″.
Equal Time of the true ☌ 1742, *May*	22	12	41	45
Equation of Time add			2	29
Apparent Time at *London*	22	12	44	14
Mean Anomaly of { ☉	11	3	6	42
☽	6	26	42	40
Place of ☉ *a* ⊖ and ☽ in her Orb	2	12	7	45
North Node ſub.	2	6	49	20
Argument Latitude	0	5	18	25
True Latitude ☽ North Aſcend.			27	43
Horizontal Parallax of { ☉				30
☽			60	19
Semidiameter of the Earth's Disk			59	49
Semidiameter of { ☉			16	2
☽			16	35
Semidiameter of the Penumbra			32	37
Semidiameter of the Disk add			59	49
Sum		1	32	26
Difference			27	12

Here, becauſe the Sum of the Semidiameters of the Earth's Disk and Penumbra exceeds the ☽'s true Latitude at the time of the true ☌, proves the Sun will be eclipſed. Secondly, becauſe the ☽'s Latitude is leſs than the Semidiameter of the Earth's Disk, proves the Sun will be centrally eclipſed ſomewhere on the Earth. And, laſtly, becauſe the difference between the Penumbra and Disk is leſs than the ☽'s true Latitude, ſhews that the Penumbra will not all fall within the ⊖ Disk.

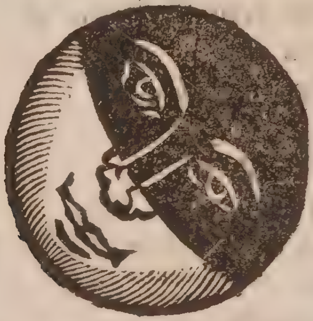
The third Eclipſe this year is of the leſſer Light, the Moon, on *Monday*, *November* 1, near Noon, inviſible, and ſmall, as follows.

	D.	h.	′.	″.
Equal time of the true ☍ 1742, *Nov.*	1	0	29	14
Time of the Reduction ſub.			3	5
Equal Time of the true Ecliptic ☍	1	0	26	9
Equation of Time add			15	44
Apparent Time at *London.*	1	0	41	53
Mean Anomaly of ☉	4	13	15	46
☽	5	19	38	55
Place of the ☉ *a* ⊖	♏	19	57	54
Place of the ☽ in her Orbit	1	19	57	54
North Node ſub.	1	28	12	56
Argument of Latitude	11	21	44	58
Reduction add			1	50
Hourly Motion of ☉			2	31
☽			38	6
Hourly Motion of ☽ *a* ☉			35	35
Sum of the horizontal Parallax			61	15
Semidiameter ☉ ſub.			16	26
Reſt apparent Semidiameter Shadow			44	49
Semidiameter ☽ add			16	38
Sum			61	27
Latitude ☽ South Deſcending			43	00
Scruples deficient			18	27
Digits Eclipſed are		6°	39	16
Scruples of Incidence			43	54
Motion from the true ☍ to the Middle			3	40
Time of Incidence, or half Duration		1	14	2
Time from the true ☍ to the Middle add			6	11
Motion of ☉ in the time of Incidence			3	6
Argument Lat. at Beginning	11	20	57	58
End	11	22	33	58

	′.	″.	
Lat. ☽ at Beginning	47	3	S. D.
End	38	57	

Hence

		D.	h.	′.	″.	
Hence the apparent Time at *London* of the	Beginning 1742, *Nov.*	1	11	34	2	mane
	Ecliptic ☍	1	0	41	53	P.M.
	Middle		0	48	4	
	End of the Eclipſe		2	2	6	
	Total Duration		2	28	4	



The Place to which the Moon is vertical, at the middle of this Eclipſe, is a little to the Eaſt of *Los Hermanos* Iſles, Longitude 164° Eaſt from *London*, and Latitude 18° North. The Places on the Globe where it will only be ſeen, are, the North part of *Lapland*, the Eaſtern and greateſt part of *Muſcovia*, all *Tartary*, in the Eaſtern parts of the *Caſpian* Sea and *Perſia*, in the *Mogul*'s Empire, *China*, *Borneo*, *Java*, and in all the *Eaſt-India* Iſlands, in *California*, and in all the North parts of *America*, in *Hollandia Nova*, *Van Diemens*, *Zelandia Nova*, and in the great Ocean, *Mal del Zur*, in *Greenland* Whale Sound, and under the North Pole, *&c.* The Moon, at the middle, will be more than half darkned on the North ſide, as the Type above doth ſhew.

The fourth and laſt Eclipſe this Year is a Solar Deliquium, on *Tueſday*, *November* 16, in the Morning, Inviſible at *London*, as follows.

	D.	h.	′.	″.
Equal Time of the true ☌ 1742 *Nov.*	15	18	10	18
Equation of Time add			12	9
Apparent Time at *London*	15	18	22	27

	D.	h.	′.	″.
Mean Anomaly of ☉	4	27	43	16
Mean Anomaly of ☽	0	2	11	32
Place of ☉ à ⊖ and ☽ in her Orbit	8	4	52	33
North Node Sub.	1	27	26	36
Argument of Latitude	6	7	25	57
True Latitude ☽ South aſcending			38	46
Horizontal Parallax of ☉				30
Horizontal Parallax of ☽			53	0
Semidiameter of the Earth's Disk			52	30
Semidiameter of ☉			16	29
Semidiameter of ☽			14	50
Semidiameter of the Penumbra			31	19
Semidiameter of the Disk add			52	30
Sum		1	23	49
Difference			21	11

Here, becauſe the Semidiameter of the Disk and Penumbra exceeds the ☽'s true Latitude at the true Time of the ☌, proves the Sun will be eclipſed, or rather that ſome Part of the Earth will be deprived of the Sun's Light: And alſo becauſe the ☽'s Latitude is leſs than the Semidiameter of the Earth's Disk, proves the Sun will be centrally eclipſed, but the Penumbra will not all fall within the Disk.

On *Monday* the 23d Day of *Auguſt* this Year at 20′ paſt 10 at Night happens a famous Conjunction of the two Superiors ♄ and ♃ in the regal Sign ♌ 27° 55′ 23″, *Saturn*'s Lat. 1° 17′ N A: *Jupiter*'s Lat. 0° 52′ N: A. ♄ will be elevated above ♃ 25′ 28″. They are Morning Stars, and under the Sun's Beams.

Of the ECLIPSES *of the Sun and Moon that will happen in the Year* 1743.

SIX Times this Year to the Inhabitants of this terraqueous Globe will the two great Lights of Heaven come within the Ecliptick Boundaries, three

Times the Sun, and as often the Moon, which happen in the following Order.

The firſt will be a Solar Defect, and falls on *Wedneſday*, *April* the 13th, in the Morning, under the Meridian of *London*, as follows.

	D.	*h.*	′.	″.
Eq. Time true ☌ *a* S: S: 1743 *April*	12	21	46	32
Equal Time true ☌ *a* A: *Carolina*	12	21	42	30
Equation of Time add			1	51
Apparent Time at *London*	12	21	44	21
Mean Anomaly of ☉	9	24	7	33
☽	4	18	32	12
Place of ☉ *a* ⊖, & ☽ in her Orb	1	3	45	5
North Node Sub.	1	19	31	3
Argument Latitude	11	14	14	2
True Latitude ☽ South Deſcending		1	21	24
Horizontal Parallax of ☉				15
☽			59	48
Semidiameter of the Earth's Disk			59	33
Semidiameter of ☉			15	48
☽			16	9
Semidiameter of the Penumbra			31	57
Semidiameter of the Disk add			59	33
Sum		1	31	30
Difference			27	36

Here I have proved an Eclipſe ſomewhere on the Earth, but not conſpicuous at *London*; but in the more Southern Parts of the World it will be ſeen, but very ſmall, where viſible; for it will neither be central, nor total any where: for which Reaſon I ſhall ſay no more of it at this Time.

The Second is a *Lunar Deliquium* on *Wedneſday April* 27, in the Afternoon; it will be total with Continuance, but not viſible at *London*. The Requiſites in the Calculation ſtand as follows.

	D.	*h.*	′.	″.
Eq. Time of the true ☍ 1743 *April*	27	3	22	33
Time of Reduction Sub.				39

True

	D.	h.	′.	″.
True Ecliptic ☍ at *London*	27	3	21	54
Equation of Time add			3	44
Apparent Time at *London*	27	3	25	38
Mean Anomaly of ☉	10	7	49	59
Mean Anomaly of ☽	10	23	44	16
Place of the ☉ *a* ⊖	1	17	31	34
Place of the ☽ in her Orbit	7	17	31	34
North Node Sub.	1	18	49	33
Argument Latitude	5	28	42	1
True Lat. ☽ North deſcending			6	48
Reduction add			0	18
Hourly Motion of ☉			2	25
Hourly Motion of ☽			30	19
Hourly Motion ☽ *a* ☉			27	54
Sum of the horizontal Parallaxes.			54	3
Semidiameter ☉ Sub.			16	6
Apparent Semidiameter ⊖ Shadow,			37	57
Semidiameter ☽ add			14	59
Sum			52	56
Lat. ☽ Sub.			6	48
Parts deficient			46	8
Digits Eclipſes are		18°	28	30
Scruples of Incidence			52	30
Scruples of half Darkneſs			21	56
Motion from the true ☌ to the middle				34
Time of Incidence Sub. and add		1 *h*	52	54
Time of half Darkneſs Sub. and add			47	10
Time from ☍ to the Middle add			1	13
Motion of ☉ in the Time of Incidence			4	33
Argument Latitude at Beginning	5	27	44	58
Argument Latitude at End	5	29	39	4

True Lat. ☽ at Beginning 11′ 46″ North D.
True Lat. ☽ at End 1 49 North D.

Hence, the apparent Time at *London* of the

	D.	h.	'.	".	
Beginning 1743 *April*	27	1	33	57	
Begin. of total Darkneſs		2	39	41	
True Ecliptick ☍		3	25	38	
Middle		3	26	51	P. M.
End of total Darkneſs		4	14	1	
End of the Eclipſe		5	19	45	
Contin. of total Darkneſs		1	34	20	
Total Duration		3	45	48	

The Type.

This Eclipſe will not be ſeen in any part of *Europe*, but along in the Eaſtern Coaſt of *Africa*, Longitude 35° Eaſt from *London*, from the *Cape of Good Hope* to the South Parts of the *Red Sea*; from thence croſſing *Turkey* in *Aſia* to the Entrance of the *Perſian Sea*, and ſo through the middle of the *Caſpian Sea*, and by the Northern Parts of *Tartary*; theſe Places, I ſay, will ſee the Moon Riſe in the middle of the Eclipſe: ſo that all the *Eaſt-Indies*, and the Iſlands in thoſe Seas will have the Eclipſe in their Hemiſphere; and all the Oriental and Southern Oceans, beyond the Antarctick Pole the Eclipſe will be ſeen; and in *Hollandia Nova*, Lat. 17° South, and Longitude 126° Eaſt from *London*, the Moon will be vertical to them when in the middle of the total Obſcuration. Laſtly, in *Mar Del Zur*, Longitude 215° Eaſt from *London*, the Moon will ſet to them at the Time of the Middle of the Eclipſe, near which lies a little Iſle in the Latitude 5° South, called *Dog-Iſle*.

The Third is of the Sun on *Thurſday, May* the 12th in the Afternoon, inviſible, as follows, in ♊ 2° 3′.

	D.	h.	′	″
Equal Time of the true ☌ 1743 *May*	12	5	52	29
Time of Reduction add			5	9
Equal Time true Ecliptic ☌ at *Lond.*	12	5	57	38
Firſt Part of the Equation of Time add			8	25
Apparent Time true Ecliptick ☌	12	6	6	3
Parallax { Longitude ☽ *a* ☉			45	28
Parallax { Latitude ☽ *a* ☉			36	1
At one Hour after Parallax { Longit. ☽ *a* ☉			44	39
At one Hour after Parallax { Lat. ☽ *a* ☉			39	41
Viſible hourly Motion ☽ *a* ☉			36	18
Time from the true to the viſible ☌ add		1 *h.*	15	9
Viſible ☌ is 1743 *May*	12	7	21	12
Parallax of Longitude ☽ *a* ☉ is then			44	4
True Latitude ☽ then North Aſc.		1°	16	32
Parallax of Latitude ☽ *a* ☉ Sub.			40	39
Viſible Latitude ☽ North			35	53
Sum of the Semidiameters of ☉ & ☽			32	40

Here the Latitude of the Moon ſeen at *London* exceeds the Sum of the Semidiameters of the Sun and Moon proves the Inviſibility of this Eclipſe there, or any where in that Latitude, but in the Northern Parts of the World it will be ſeen, for near the Arctick Circle, *viz.* in Latitude 66° 35′, the Sun's Northern Limb, will be juſt touched by the ☽'s Southern, ſo that betwixt that and the North Pole it will be ſeen.

		′	″
Semidiameter of the Earth's Disk		60	5
Semidiameter of the Penumbra		32	40
Sum	1°	32	45
Difference		27	25
Moon's true Lat. at true ☌ N. A.	1	12	34

By this laſt Work I have proved that the Eclipſe will not be Central, nor total any where on the Earth, becauſe the ☽'s Lat. exceeds the Semidiameter of the Earth's Disk; ſo it will be but a ſmall Eclipſe where moſt conſpicuous, for which Reaſon I ſhall forbear to ſay any more of it at this Time.

The fourth Eclipſe this Year happens on *Thurſday, October* 6, in the Afternoon, of the Sun, and inviſible at *London*, as I thus prove.

	D.	h.	′	″
Equal Time true ☌ 1743 *October*	6	2	43	6
Time of Reduction Sub.			6	57
Eq. Time true Ecliptic ☌ at *London*	6	2	36	9
Firſt Part of the Equation of Time add			7	7
Apparent Time	6	2	43	16
Sun and Moon's Place	♎	23	45	36
Parallax { Longitude ☽ *a* ☉			3	33
Parallax { Latitude ☽ *a* ☉			51	53
At an Hour after the Parallax of { Long.			9	30
At an Hour after the Parallax of { Lat.			53	3
Viſible hourly Motion ☽ *a* ☉			24	21
Time from the true, to the viſible ☌ add			8	45
The viſible ☌ is 1743 *October*	6	2	52	1
Parallax of { Long.			4	30
Parallax of { Lat.			52	6
True Lat. ☽ then N. D.		1	24	42
Viſible Latitude ☽ North			32	36
Sum of the Semidiameters of ☉ & ☽			31	54

Becauſe the viſible Lat. ☽ exceeds the Sum of the Semidiameters of the Sun and Moon, therefore I ſay the Sun will not be Eclipſed at *London*, but at *Berwick upon Tweed* the Sun's upper Side is touched by the Moon's lower; therefore it is a Northern Eclipſe alſo, but very ſmall where moſt viſible, proved by this Work.

	′	″
Semidiameter of the Earth's Disk	55	16
Semidiameter of the Penumbra	31	54
Sum	87	10
Difference	23	22
True Lat. ☽ at the true ☌	85	

I

It will be ſeen in the *Orcades*, *Iceland*, *Groenland*, and Places adjacent; but if the careful Aſtronomer is not very diligent to attend the Time, he may chance to miſs the Sight thereof, becauſe the Duration thereof will be but ſmall.

The Fifth is a great Eclipſe of the Moon, and viſible at *London* if the Air be clear; it falls on *Sunday* the 22d Day of *October* in the Morning, a *Synopſis* of the Calculation followeth.

	D.	h.	′.	″.
Eq. Time of the true ☍ 1743 *October*	21	15	25	2
Time of Reduction Sub.				3
Middle Time of the true Ecliptick ☍	21	15	24	59
Equation of Time add			9	37
Apparent Time at *London* 1743 *Oct.*	21	15	34	36
Mean Anomaly of ⊙	4	2	46	43
☽	4	2	46	34
Place of the Sun *a* ⊖	♏	9	16	45
Place of the Moon in her Orbit	1	9	16	45
North Node Sub.	1	9	25	58
Argument Latitude	11	29	50	47
True Latitude ☽ South deſcending				48
Reduction add				2
Hourly Motion of ⊙			2	30
☽			35	52
Hourly Motion ☽ *a* ⊙			33	22
Sum of the Horizontal Parallaxes			59	11
Semidiameter Sun Sub.			16	24
Apparent Semidiameter Earth's Shadow			42	47
Semidiameter ☽ add			16	15
Sum			59	2
Lat. ☽ Sub.			0	48
Parts deficient			58	14
Digits Eclipſed are		21°	30	0
Motion of half Duration			59	2
Motion of half Darkneſs			26	31
Motion from ☍ to the Middle				4
Time of half Duration		1*h*	46	9
half Darkneſs			47	41
☍ to the Middle add				7

Motion

	D.	*h.*	′.	″.
Motion of the Sun in half Duration			4	25
Argument Latitude at Begin.	11	28	47	20
Argument Latitude at End	0	0	54	14

Latitude ☽ at Beginning 6′ 20″ S.D.
Latitude ☽ at End 4 43 N.A.

		D.	*h.*	′.	″.	
Hence, the apparent Time at *London* of the	Beginning 1743 *October*	21	13	48	34	P.M.
	Beginning of total Dark.		14	47	2	
	True Ecliptick ☍		15	34	36	
	Middle, or greateſt Obſcu.		15	34	43	
	End of total Darkneſs		16	22	24	
	End of the Eclipſe		17	20	52	
Continuance of the total Darkneſs			1	35	22	
Total Duration of the Eclipſe			3	32	18	

The Type.

This Eclipſe will be ſeen (if the Air is clear) all over *Europe*, *America*, and almoſt in all *Africa*. At the Middle of the Eclipſe the Moon is vertical to thoſe that ſail in the *Atlantic* Ocean, a little to the North-Eaſt of the *Caribbee Iſlands* in the Lat. of 15° North.

But a very little of *Tartary* will ſee any thing of it, if thoſe barbarous People were capable of obſerving of it, as I ſuppoſe they are not: In 35 Eaſt Longitude from *London* in *Cafraria*, a little to the North-eaſt of the Lake *Agr*, they will ſee there the Moon ſet at the Time of the total Darkneſs, and alſo in the *Red Sea*, in *Turkey*, in *Aſia*, at *Teſſis* in *Perſia*, and on the Weſtern Coaſt of the *Caſpian Sea*.

But in *Oceanus Magnus*, in *Mar del Zur*, and at *Dog-Iſle*, the Moon will be ſeen to riſe in the Middle of the greateſt Darkneſs. And now I have given the Times and Quantity, as alſo where it will be ſeen, where vertical, and where it Riſes and Sets Eclipſed; therefore I have no more to add, only to adviſe the careful and judicious Aſtronomer to obſerve the true Times of the whole Durations, and compare them with theſe my laborious Calculations. *The Sun ſhall be no more thy Light by Day, neither for Brightneſs ſhall the Moon give Light unto thee.* Iſaiah 60. 19.

The Sixth, and laſt Eclipſe this Year, is a ſmall and inviſible one, of the greater Light, the Sun; it happens on *Sunday*, the 5th Day of *November*, at 6 in the Morning, but will be only ſeen in the Southern Regions, as I thus prove.

	D.	*h.*	′	″
Equal Time of the true ☌ 1743, *Nov.*	4	18	26	19
Equation of Time add			15	8
Apparent Time at *London*	4	18	41	27
Mean Anomaly of ☉	4	16	42	2
☽	10	7	19	14
Place of the ☉ *a* ⊖ and ☽ in her Orb.	7	23	30	12
North Node ſub.	1	8	40	34
Argument Latitude S. A.	6	14	49	38
True Latitude of the Moon S. A.		1	16	40
Differences of the Horizontal Parallax, ☉ and ☽ is equal to the Semidiameter ⊖'s Disk.			53	44
Semidiameter of the Penumbra			31	36
Sum			85	20
Difference			22	8

By this, it is plain, the Sun will be Eclipſed at the time above-mentioned, but it will only be viſible to the Southern parts of the World; and it will be but ſmall where moſt conſpicuous, and therefore ſcarce worth our time to make any farther enquiry about it: with which I conclude my Account of the Eclipſes for the Year of our Redemption 1743.

Of the Luminarian Eclipſes that will happen in the Year 1744.

IN the annual Revolution of that glorious Body, the Sun, twice will the dark Body of the Moon interpoſe and hide its Light from us; and twice will the Earth interpoſe between the Sun and Moon, and deprive her of a borrowed Light; they happen in the following order.

The firſt will be of the Sun, on *Sunday*, the firſt Day of *April*, near 10 at Night; therefore inviſible at *London*, as I thus prove.

	D.	*h.*	′	″
Equal Time of the true ☌ 1744, *April*	1	9	51	35
Equation of Time ſub.				43
Apparent Time at *London*	1	9	50	52
Mean Anomaly of ☉	9	13	12	12
☽	2	29	21	3
Place of ☉ *a* ⊖ and ☽ in her Orb ♈	0	23	16	52
North Node	1	00	48	41
Argument of Latitude	11	22	28	11
True Latitude ☽ South Deſc.			39	16
Semidiameter of the Earth's Disk			55	52
Semidiameter of the Penumbra			31	53
Sum			87	45
Difference			23	5

In the South-Weſt Parts of the World, this will be a great Eclipſe; for the Center of the Shade will fall within the Disk, but all the Penumbra will not.

The Second is a Lunar Defect, and falls on *Sunday*, *April* 15. in the Evening, and nearly all viſible at *London*, as follows.

	D.	*h.*	′	″
Equal Time of the true ☍ 1744, *April*	15	8	25	31
Time of Reduction, add			2	56
Equal Time of the true Ecliptic ☍	15	8	28	27
Equation of Time add			9	24
Apparent Time at *London*	15	8	37	51

Mean

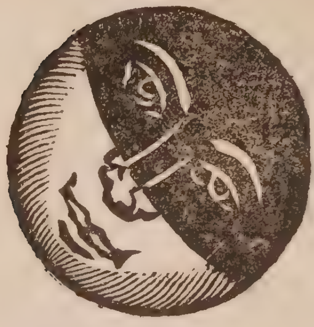
	D.	h.	′	″
Mean Anomaly of ☉	9	26	56	33
Mean Anomaly of ☽	9	1	28	12
Place of the Sun *a* ⊖	♉	6	51	16
Place of the ☽ in her Orbit	♏	6	51	16
North Node	1	0	3	53
Argument Latitude	6	6	47	33
True Latitude ☽ South Aſc.			35	25
Reduction ſub.			1	31
Hourly Motion of ☉			2	25
Hourly Motion of ☽			33	24
Hourly Motion ☽ *a* ☉			30	59
Sum of the Horizontal Parallaxes			56	49
Semidiameter ☉ ſub.			16	9
Semidiameter of the Earth's Shadow			40	40
Semidiameter ☽ add			15	42
Sum			56	22
Latitude ☽ ſub.			35	25
Parts deficient			20	57
Digits Eclipſed are		8°	0	0
Scruples of Incidence			43	51
Motion from the Middle to the ☍			3	2
Time of Incidence ſub. & add		1*h*	24	55
Time from the Middle to the true ☍ ſub			5	52
Motion of the ☉ in the time of Incidence			3	25
Argument Latitude at Beginning	6	6	0	7
Argument Latitude at End	6	7	34	39

	′	″	
True Lat. ☽ at the Beginning	31	20	S. A.
True Lat. ☽ at the End	39	31	

Hence, the apparent Time at *London* of the

	D.	h.	′	″	
Beginning 1744, *Apr.* 15		7	7	4	P.M.
Midd. or greateſt Darkneſs		8	31	59	
Ecliptic ☍		8	37	51	
End		9	56	54	
Total Duration.		2	49	50	

The Type.



At *London*, that Night, the Sun ſets at 7*h* 12′ 12″, and the ☽ riſes at 7*h* 14′ 28″; by which, I ſee the Eclipſe begins 7′ 24″ before ☽ riſes.

Either by the Calculation, or Type above, you may ſee that two Thirds of the ☽'s Diameter on the North ſide will fall within the Earth's Shadow, and that ſhe riſes at *London* with a black Forehead-Cloth, as this Type ſheweth.

The Type.

At the middle of the Eclipſe, the Moon will be vertical to the North-Eaſt parts of *Madagaſcar*-Iſle; it will be viſible to all *Europe*, *Africa* and *Aſia*, except the North-Eaſt Parts of *Tartary* and *Japan*; ſhe will be ſeen to riſe in the middle or greateſt Darkneſs at *Farò*-Iſles, and in the Ocean to the Weſtward of *Ireland*, 5°, and on the Eaſtern Coaſt of South *America*: and at the ſame time ſhe will be ſeen to ſet at the *Philippine* Iſlands, and places adjacent, in the *Eaſt-Indies*.

The Third is of the Sun, and inviſible at *London*, on *Tueſday*, *September* 25th, in the Morning, as follows.

Equal

	D.	*h.*	′	″
Equal Time of the true ☌ 1744, *Sept.*	24	13	16	23
Equation of Time add			12	6
Apparent Time at *London*	24	13	28	29
Mean Anomaly of ☉	3	6	48	38
☽	7	20	38	43
Place of the ☉ *a* ⊖, and ☽ in her Orb.	6*ſ.*	13°	2	41
Aſcending Node ſub.	0	21	29	15
Argument of Latitude	5	21	33	26
True Latitude of the Moon's N. D.			43	59
Semidiameter of the Earth's Disk			58	36
Semidiameter of the Penumbra			32	37
Sum			91	13
Difference			25	59

This will be a great Eclipſe in our Parallel, and 180 Degrees of Longitude from *London*, which place is incognita; for it is not yet certainly known whether North *America* joins to the North-Eaſt Parts of *Tartary*, or whether it be Sea: but be that as it will, the Eclipſe in thoſe Parts will be very conſpicuous, for the Center of the Penumbra will fall within the Earth's Disk.

The laſt Eclipſe this Year, falls on *Wedneſday*, the 10th of *October*, near Noon, ſo inviſible at *London*: the Requiſites in the Calculation ſtands thus.

	D.	*h.*	′	″
Equal Time of the true ☍ 1744, *Oct.*	10	0	48	21
Time of Reduction add			3	30
Equal Time of the true Ecliptic ☍	10	0	51	51
Equation of Time add			8	6
Apparent Time	10	0	59	57
Mean Anomaly of ☉	3	22	3	57
☽	2	12	53	20
Place of the Sun from the Earth	♎	28	25	13
Place of the Moon in her Orb	0	28	25	13
Moon's North Node	0	20	39	54
Argument of Latitude	0	7	45	19
True Latitude ☽ N. Aſcending			40	26

Re-

			′	″
Reduction ſub.			1	44
Hourly Motion of ☉			2	30
☽			32	20
Hourly Motion of ☽ *a* ☉			29	50
Sum of the Horizontal Parallaxes			55	48
Semidiameter of ☉			16	21
⊖.Shadow			39	27
☽			15	26
Sum			54	53
Latitude ☽			40	26
Parts deficient			14	27
Digits eclipſed are		5°	37	4
Scruples of Incidence			37	8
Motion from the middle to ☍			3	27
Time of Incidence, ſub. and add		1*h*	14	41
Time from the middle to the ☍ ſub.			6	56
Motion of the Sun in time of Incidence			3	7
Argument Lat. at Beginning	0	7	5	4
End	0	8	25	34
Lat. ☽ at Beginning	N. A.		36	57
End	N. A.		43	54

		D.	*h.*	′	″	
Hence the apparent Time at *London* of the	Beginning 1744, *Oct.*	9	23	38	20	
	Middle	10	0	53	1	P.M.
	True Ecliptic ☍	10	0	59	57	
	End	10	2	7	42	
	Total Duration		2	29	22	

The Type.

This Eclipſe will not be ſeen at *London*, but to our Antipodes it will be very conſpicuous; and in the *Oceanus Magnus*, and *Mar del Zur*: it will be ſeen in all the North-Weſt Parts of *America*, and in *Hudſon's*-Bay; at *Zelandia Nova*, *Van Diemens*, *Hollandia Nova*; in the greateſt part of *Tartary*, in *China*, and in all the Eaſtern Iſlands. At the middle of the Eclipſe, the Moon will be vertical to the great Ocean, a little to the South-Weſt of the Iſle *St. Pedro*; Latitude 11° North, Longitude 179°.

At the Weſtern Coaſts of *Carolina*, *Virginia*, *Maryland* and *Penſilvania*, the Moon will be ſeen to riſe in the middle of the Eclipſe; and at *Benores*, in the *Mogul*'s Empire, and at the very North-Eaſt Borders of *Muſcovia* and places adjacent, the Moon will be ſeen to ſet in the middle of the greateſt Darkneſs.

I will cover the Heaven, and make the Stars thereof dark: I will cover the Sun with a Cloud, and the Moon ſhall not give her Light. Ezekiel 32. 7.

Of the ECLIPSES *of the Sun and Moon that will happen in the Year of our Lord God* 1745.

WIthin the Circumference of this Year, there will be only two Solar Eclipſes, and both inviſible at *London*, according to the following Demonſtrations.

The firſt of theſe will fall on *Friday*, *March* 22. in the Morning, according to the following Account.

	D.	h.	'	"
Equal Time of the true ☌ 1745, *Mar.*	21	14	47	6
Equation of true Time ſub.			3	55
Apparent Time at *London*	21	14	43	11
Mean Anomaly of ⊙	9	2	18	28
Mean Anomaly of ☽	1	7	1	54
Place of ⊙ *a* ⊖, and ☽ in her Orbit	0	12	27	28
Moon's North Node	0	12	3	3

Argument

	D.	h.	'	''
Argument Latitude	0	0	24	25
True Latitude ☽ North Aſcend.			2	7
Semidiameter of the Earth's Disk			53	7
Semidiameter of the Penumbra			31	13
Sum			84	20
Difference			21	54

This will be a very great Eclipſe in it ſelf, for the Penumbra doth all fall within the Disk; it will be very formidable to our Antipodes, but in the *Eaſt-Indies* much greater than to them: for in the North *Philippine*-Iſles, the Sun at the time of the Eclipſe will be vertical, in the Latitude of about 5° North, and Longitude Eaſt from *London* 139°.

The Second of theſe Solar Defects, falls on *Sunday*, *September* 14th, in the Afternoon, as follows.

	D.	h.	'	''
Middle Time, true ☌ 1745, *Sept.*	14	5	2	18
Time of Reduction ſub.				2
Equal Time, true Ecliptic ☌	14	5	2	16
Equation of Time add				52
Apparent Time at *London.*	14	5	3	8
Mean Anomaly of ☉	2	26	21	39
☽	6	4	13	33
Place of the Sun and Moon	6	2	36	35
Moon's North Node	0	2	42	20
Argument Latitude	5	29	54	15
True Latitude ☽ N. D.				30
Reduction add				1
Hourly Motion of ☉			2	27
☽			38	9
Hourly Motion of the ☽ *a* ☉			35	42
Semidiameter of the Earth's Disk			60	18
Semidiameter of the Penumbra			32	53
Sum			93	11
Difference			27	25
Parallax of Longitude ☽ *a* ☉			14	28
Latitude ☽ *a* ☉			57	57

Here, the Parallax of Latitude ☽ *a* ☉, at the time of the true ☌, is within 20″ as great as it can be at *London*, and the viſible ☌ will ſucceed the true; therefore the Sun's Altitude will be leſs at the viſible ☌ than it is now, and conſequently the Parallax in Latitude of ☽ *a* ☉ will then far exceed the Sum of the Semidiameters of the Luminaries, by which the Moon is far depreſs'd below the Sun's Limb, which proves it inconſpicuous at *London*: but, notwithſtanding, it will be a very great Eclipſe in it ſelf, *viz.* both Total and Central in *America*, for the Penumbra doth all fall within the Earth's Disk. But, becauſe I find it will be viſible at *Port-Royal* in *Jamaica*, and near their Meridian too; I will therefore give the time of it at that Place, that our *Engliſh* reſiding there, may thereby correct the Longitude of that Place, if need require.

Hence, the apparent Time at *Port-Royal* in *Jamaica*, of the

	D.	*h.*	′	″	
Beginning 1745, *Sept.*	13	22	15	20	P. M.
Midd. or greateſt Darkn.		23	35	18	P. M.
Viſible Conjunction		23	38	29	P. M.
End of the Eclipſe	14	0	49	24	P. M.
Total Duration		2	34	4	
Digits Eclipſed are		7°	0	0	

Lat. ☽ ſeen at the	′	″	
Beginning	2	58	S. A.
End	23	48	S. A.

The Type.

Of the ECLIPSES *of the Luminaries that will fall in the Year of Human Redemption* 1746.

ACcording to Aſtronomical Computation, there will be four Eclipſes within this Year's Revolution, *viz.* two of the greater Light, the Sun; and as many of the leſſer Light, the Moon: and they happen in this following order.

The firſt is a partial Eclipſe of the Moon, inviſible at *London*, for the Eclipſe ends 22′ 44″ e'er the Moon riſes there; it falls on *Monday*, *February* 24th, in the Afternoon, according to the following Calculation.

	D.	*h.*	′	″
Equal Time of the true ☍ 1746, *Feb.*	24	3	45	23
Time of Reduction ſub.			2	43
Middle Time, true Ecliptic ☍	24	3	42	40
Equation of Time, firſt part ſub.			4	11
Apparent Time at *London*	24	3	38	29
Mean Anomaly of ☉	8	6	57	33
Mean Anomaly of ☽	5	3	7	42
Place of the ☉ *a* ⊖	♓	16	59	28
Place of the ☽ in her Orbit	5	16	59	28
Moon's North Node	11	24	5	30
Argument Latitude	5	22	53	58
True Latitude ☽'s North Deſcending			37	2
Reduction add			1	35
Hourly Motion of ☉			2	30
Hourly Motion of ☽			37	33
Hourly Motion ☽ *a* ☉			35	3
Sum of the Horizontal Parallaxes			60	49
Semidiameter ☉			16	21
Apparent Semidiameter of the ⊖'s Shadow			44	28
Semidiameter ☽			16	35
Sum			61	3
Latitude ☽			37	2
Parts deficient			24	1
Digits Eclipſed are		8°	41	0
Scruples of Incidence			48	32

Motion

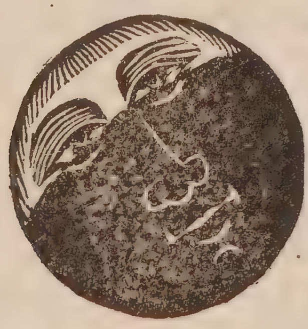
				′	″
Motion from the ☍ to the Middle				3	10
Time of Incidence, ſub. and add			1	23	6
Time from ☍ to the Middle add				5	25
Motion of the ☉ in time of Incidence				3	28
Argument of Lat. at	Beginning	5	22	1	58
	End	5	23	45	58

		′	″	
Lat. ☽ at	Beginning	41	32	N. D.
	End	32	32	

		D.	h.	′	″
Hence the apparent Time at *London* of the	Beginning 1746, *Feb.*	24	2	20	48
	Ecliptic ☍		3	38	29
	Middle		3	43	54
	End		5	7	0
	Total Duration		2	46	12

The Eclipſe ends 22′ 44″ e'er the ☽ riſes at *London*.

The Type.



This Eclipſe will be ſeen in *Aſia*, part of *Africa* and *Europe*; the Moon at the time of the middle of the Eclipſe, is vertical a little to the South of the great Iſland *Mindano*, one of the *Philippine*-Iſles, in Latitude 5° North, and Eaſt Longitude from *London*, 123° and a half. The Moon will be ſeen to riſe in the middle of the Eclipſe, at the Mountains *Zambas*, *Mongale*, on the Eaſtern Coaſts of *Africa*, Latitude 13° South, Longitude 35° Eaſt from *London*, and on the

Eaſtern Coaſt of the *Archipelago*, in the *Baltic* Sea, and in *Norway*; it will be ſeen in the Eaſtern Parts of *Sweedland* and *Poland*, in all *Muſcovia*, at *Cyprus*, in the *Red-Sea*, and at *Madagaſcar*. The places where ſhe is ſeen to ſet in the middle of the Eclipſe, falls in the vaſt Ocean, and *Mar del Zur*, between *Dog*-Iſle and *Waterland*.

The Second is a Solar Defect, and happens on *Tueſday*, *March* 11th, in the Morning early, and conſequently not to be ſeen in the Horizon of *London*; it happens as follows.

	D.	h.	′	″
Equal Time of the true ☌ 1746, *Mar.*	10	14	55	26
Equation of Time ſub.			7	25
Apparent Time at *London*	10	14	48	1
Mean Anomaly of ☉	8	21	12	57
☽	11	12	6	26
Place of ☉ *a* ⊖ and ☽ in her Orbit	0	1	22	14
Moon's North Node	11	23	19	2
Argument of Latitude	0	8	3	12
True Latitude of the Moon's N. A.			41	59
Semidiameter of the Earth's Disk			52	37
Semidiameter of the Penumbra			31	11
Sum			83	48
Difference			21	26

This will be a central Eclipſe, but all the Penumbra doth not fall within the Earth's Disk; it will be very great about the *Japon-Iſles*, and places adjacent; the Sun will then be vertical a little to the South of the North *Philippine* Iſles.

The Third is a *Lunar Deliquium*, and viſible at *London*, (if Clouds interpoſe not) on *Tueſday*, the 19th Day of *Auguſt*, as follows.

	D.	h.	′	″
Equal Time of the true ☍ 1746, *Aug.*	19.	12	8	21
Time of Reduction ſub.			3	25
Middle Time of the true ☍	19	12	4	56
Equation of Time ſub.			6	52

	D.	*h.*	′	″
Apparent Time	19	11	58	4
Mean Anomaly of ☉	2	0	46	7
Mean Anomaly of ☽	9	27	7	30
Place of the ☉ *a* ⊖	♍	7	17	33
Moon in her Orbit	11	7	17	33
Moon's North Node	11	14	44	24
Argument Latitude	11	22	33	9
True Latitude ☽ South Deſcending			38	51
Reduction add			1	40
Hourly Motion of ☉			2	25
Hourly Motion of ☽			31	42
Hourly Motion of ☽ *a* ☉			29	17
Sum of the Horizontal Parallaxes.			55	14
Semidiameters of ☉			16	8
Semidiameters of ⊖			39	6
Semidiameters of ☽			15	17
Sum			54	23
Latitude ☽			38	51
Parts deficient			15	32
Digits Eclipſed are		6°	6	0
Scruples of Incidence			38	3
Motion from ☍ to the middle			3	19
Time of Incidence Sub. and add		1	17	58
Time from ☍ to the Middle add			6	48
Motion of ☉ in the Time of Incidence			3	8
Argument Latitude at Beginning	11	21	51	58
Argument Latitude at End	11	23	14	20

	′	″	
Lat. ☽ at Beginning	43	24	S. D.
Lat. ☽ at End	35	16	

Hence, the apparent Time at *London* of the

	D.	*h.*	′	″	
Beginning is 1746, *Aug.*	19	10	46	54	P.M.
Ecliptic ☍		11	58	4	
Middle, or greateſt Dark.		12	4	52	
End of the Eclipſe		13	22	50	
Total Duration		2	35	56	

The

The Type.

The Sun ſhall be turned into Darkneſs, and the Moon into Blood, before the great and terrible Day of of the Lord come. Joel 2. 31. Acts 2. 20.

This Eclipſe will be ſeen in *Europe*, *Africa*, part of *Aſia*, and in South *America*, the Moon at the middle of the Eclipſe is vertical in the *Ethiopian* Ocean about 6° to the Northward of *St. Helena*. The Moon will be ſeen to riſe Eclipſed in *Carolina*, *Virginia*, and places adjacent. And in the North-Eaſt Parts of *Muſcovia*, they will at the ſame time ſee her ſet in the middle of the Eclipſe; and alſo at *Orixa*, in the *Eaſt-Indies*, and places adjacent.

The Fourth and laſt Eclipſe this Year, falls on *Thurſday*, *September* 4th, in the Forenoon, and is of the Sun, inviſible at *London*, as I thus prove.

	D.	*h.*	′	″
Equal Time of the true ☌ 1746, *Sept.*	3	21	21	51
Time of Reduction add			3	14
Equal Time, true Ecliptic ☌ at *London*	3	21	25	5
Equation of Time ſub.			2	33
Apparent Time	3	21	22	32
Mean Anomaly of ☉	2	15	56	2
Mean Anomaly of ☽	4	18	6	49
Place of the Sun and Moon	5	22	15	34
Moon's North Node ſub.	11	13	55	10
Argument of Latitude	6	8	20	24
True Latitude ☽ South Aſcending			43	27
Reduction ſub.			1	51
Hourly Motion of ☉			2	26
Hourly Motion of ☽			36	48
Hourly Motion of ☽ *a* ☉			34	22

Se.

		'	"
Semidiameter of the Earth's Diſk		59	7
Semidiameter of the Penumbra		32	37
Sum		91	44
Difference		26	30
Parallax of Longitude ☽ *a* ☉		39	1
Parallax of Latitude ☽ *a* ☉		32	10
Viſible Latitude of the Moon's South	1°	15	37

Here, at the time of the true ☌, the Latitude of the ☽ ſeen ſo far, exceeds the Sum of the Semidiameters of the Luminaries, that I ſee it will be ſo at the viſible ☌ alſo, and conſequently it will be inconſpicuous at *London*; for which reaſon I ſhall forbear the other part of the Calculation: but it will be a central Eclipſe in itſelf, and in the Southern Parts of the Earth very great. The Sun will be vertical at the middle of the Eclipſe, to the Mountains of *Ganca*, in *Ethiopia*, Lat. 3° North, and 37° Eaſt Longitude from *London*. So I ſhall conclude all with the Words of the Prophet *Jeremiah*, Chap. 10. verſe 2. *Thus ſaith the Lord, learn not the way of the Heathen, and be not diſmayed at the Signs of Heaven, for the Heathens are diſmayed at them.*

Of the ECLIPSES *of the Sun and Moon that will happen in the Year of Human Redemption* 1747.

THE firſt Eclipſe this Year, is a ſmall one, of the Sun, on *Thurſday*, the 29th Day of *January*, in the Afternoon, but will not be ſeen at *London* if the Air be ever ſo clear, as I thus prove.

	D.	*h.*	'	"
Equal Time of the true ☌ 1747, *Jan.*	29	2	57	52
Equation of Time ſub.			14	57
Apparent Time at *London*	29	2	42	55

	D.	h.	′	″
Mean Anomaly of ☉	7	11	2	40
Mean Anomaly of ☽	8	21	42	50
Place of the ☉ *a* ⊖, and ☽ in her Orb	10	20	34	58
Moon's North Node.	11	6	7	36
Argument Latitude	11	14	27	22
True Latitude ☽ South Deſcending		1	20	17
Semidiameter of the Earth's Disk			56	32
Semidiameter of the Penumbra			32	19
Sum			88	51
Difference			25	13

This Eclipſe will no where be Central, it will be but very ſmall where viſible; the Sun will be vertical at the time of the Eclipſe, near the middle of *Brazil* in South *America*, Lat. 15° South, and Longitude 44° Weſt from *London.*

The Second is a Lunar Defect, and falls on *Saturday*, *February* 14th, (or if you pleaſe, on *Valentine'* Day) in the Morning, viſible at *London*, according to the following Calculation.

	D.	h.	′	″
Equal Time of the true ☍ 1747, *Feb.*	13	17	9	5
Time of Reduction add				2
Middle Time of the true Ecliptic ☍	13	17	10	2
Equation of Time ſub.			7	
Apparent Time at *London*	13	17	3	1
Mean Anomaly of ☉	7	26	24	4
Mean Anomaly of ☽	3	15	25	4
Place of the ☉ *a* ⊖	♓	6	17	4
Place of the Moon in her Orb	5	6	17	4
Moon's North Node	11	5	18	3
Argument of Latitude	6	0	59	
True Latitude ☽ South Aſcending			5	
Reduction ſub.				1
Hourly Motion of ☉			2	3
Hourly Motion of ☽			34	3
Hourly Motion ☽ *a* ☉			32	
Sum of the Horizontal Parallax			58	
Semidiameter of the Sun			16	2

Se

				′	″
Semidiameter Earth's Shadow				41	36
Semidiameter ☽				15	58
Sum				57	34
Latitude ☽				5	9
Parts deficient				52	25
Digits Eclipſed			19°	42	0
Scruples of Incidence				57	20
Motion from Middle to ☋					25
Motion of half Darkneſs				25	6
Time of	half Duration		1	47	4
	half Darkneſs			46	53
	from Middle to ☋				47
Motion of the ☉ in Time of Incidence				4	29
Argument Lat. at	Beginning	5	29	57	15
	End	6	2	0	53

		′	″	
Latitude ☽ at	Beginning	0	14	North D.
	End	10	32	South A.

The Type.

Note, The Sun riſeth that Morning at *London*, at 6*h* 47′ 12″, and the ☽ ſets at 6*h* 47′, by which you ſee the Eclipſe nearly ends as the ☽ ſets.

Hence, the apparent Time at *London* of the

	D.	h.	′	″
Beginning 1747, *February*	13	15	15	25
Beginning of total Darkneſs		16	15	36
Middle, or greateſt Darkneſs		17	2	29
True Ecliptic ☍		17	3	16
End of total Darkneſs		17	49	22
End of the Eclipſe		18	49	33
Continuance of total Darkneſs		1	33	46
Total Duration		3	34	8

READER,

If you would know how theſe Eclipſe' are made,
Moon's is by th' Earth's thick interpoſing Shade;
Which doth Eclipſe the Brows of Cynthia *bright,*
And her brown Shadows, quench her Brother Light.

This Eclipſe will be ſeen in part of *Europe*, part of *Africa*, and in all *America*; the Moon in the middle of the Eclipſe will be vertical a little to the Eaſt of *Porto Bello*, in South *America*, Latitude 9° North, and 79° Weſt from *London*; the Moon will ſet Eclipſed at *Varſiga* in *Ruſſia*, a little to the Weſtward of *Arkangel*; on all the Weſtern Coaſts of *Muſcovia*, at *Leopol* in *Poland*, in *Greece*, and ſo the Horizon of the ſetting Moon, in the middle of the Eclipſe, croſſes the *Mediterranean Sea*, in Longitude 12° Eaſt from *London*, and paſſes by *Barca*, through *Tripoli*, *Barbary*, *Nigritia*, and the moſt remote Parts of *Guinea*, where it leaves the Continent on the Weſtern Parts of *Africa*, Lat. 2° South, 12° Eaſt from *London*, and from thence it paſſes through the *Ethiopian* Ocean, to the *Antarctic* Circle. The Horizon of the riſing Moon in the middle of the Darkneſs, paſſes through the *Oceanus Magnus*, and *Mar del Zur*, croſſing the Equator, in 168° of Weſt Longitude, from the Meridian of *London*, that is 5° to the Weſtward of the Iſle *Tuberones*.

The Third Eclipſe this Year, is of the greater Light, the Sun, inviſible at the Metropolis of *Great-Britain*;

it will be on *Saturday*, the 28th Day of *February*, in the Morning, before Sun-riſing, according to the following Calculation.

At *London* 1747.	D.	h.	′	″
Middle Time, true ☌ *February*	27	17	18	27
Equation of Time ſub.			10	42
Apparent Time at *London*	27	17	7	45
Mean Anomaly of ⊙	8	10	12	57
Mean Anomaly of ☽	9	10	25	19
Place of the ⊙ *a* ⊖, and ☽ in her Orb	11	20	18	12
Moon's North Node	11	4	33	43
Argument Latitude	0	15	44	29
True Lat. ☽ N. A.		1	21	17
Semidiameter of the Earth's Disk			54	44
Semidiameter of the Penumbra			31	45
Sum			86	29
Difference			22	59

This will be but a ſmall Defect in itſelf, for it will no where on the Earth be Central, for a very ſmall Segment of the Penumbra falls within the Earth's Disk. The Sun at that time will be vertical to *Mantabay*, in 4° South Latitude, and 99° 15′ Eaſt Longitude: but, although the Sun is then vertical to theſe parts of the *Eaſt-Indies*; yet, I ſay, they will not ſee any Eclipſe there, for the ☽ will then by her Parallax be thrown to the Northward of the Sun; in *Tartary*, it will only be ſeen.

The Fourth is of the Sun alſo, and it will be inviſible at *London*, in the Morning, on *Sunday*, *July* 26th. Take the following farther Account of it.

	D.	h.	′	″
Equal Time of the true ☌ 1747 *July*	25	20	50	47
Time of Reduction ſub.			6	0
Equal Time of the true Ecliptic ☌	25	20	44	47
Equation of Time ſub.			9	56
Apparent Time at *London*	25	20	34	51

	D.	h.	′	″
Mean Anomaly of ☉	1	6	13	47
☽	2	3	57	53
Hourly Motion of the ☽ *a* ☉			29	21
Place of the Sun and Moon	4	13	19	25
Moon's North Node	10	26	43	14
Argument Latitude	5	16	36	11
True Latitude of the ☽ N. D.		1	9	25
Reduction add			2	56
Semidiameter of the Earth's Disk			54	17
Penumbra			31	21
Parallax of Longitude ☽ *a* ☉			35	7
Latitude ☽ *a* ☉			25	34
At one Hour before apparent ☌, *viz.*	25	19	34	51
Parallax of Longitude ☽ *a* ☉			40	5
Latitude ☽ *a* ☉			26	21
Viſible hourly Motion of ☽ *a* ☉			24	21
Interval of the true and viſible ☌ ſub.		1	26	33
Viſible ☌ is 1747 *July*	25	19	8	18
Parallax of Longitude ☽ *a* ☉			41	42
Latitude ☽ *a* ☉			26	58
Moon's true Latitude then N. D.		1	13	15
Viſible Latitude ☽ N. D.			46	17

This far exceeding the Sum of the Semidiameters of the Luminaries, proves it cannot be ſeen at *London*, be the Morning ever ſo ſerene; but in the Latitude of 80° North, there the Sun will be 1° 24′ Eclipſed on the North, or upper ſide thereof: the Center of the Penumbra doth no where fall within the Diſk of the Earth, ſo 'twill be but ſmall where moſt viſible, which is in the Arctic Circle.

At the time of the Eclipſe, the Sun will be vertical to *Arabia Felix*, 5° to the Eaſt of the *Red-Sea*, Latitude 17° North, and Longitude from *London* 45° Eaſt.

The Fifth is a Lunar Defect, this will be total, and inviſible at *London*, on *Sunday*, the 9th Day of *Auguſt*, at 8 in the Morning, by the annexed Calculation.

	D.	h.	′	″
Equal Time of the true ☍ 1747, *Aug.*	8	20	51	36
Time of Reduction add				20
Equal Time of the true Ecliptic ☍	8	20	51	56
Equation of Time ſub.			2	57
Apparent Time at *London*	8	20	48	59
Mean Anomaly of { ☉	1	20	1	44
☽	8	6	52	21
Place of the ☉ *a* ⊕	♌	26	46	48
Place of the Moon in her Orbit	10	26	46	48
Moon's North Node	10	25	58	14
Argument of Latitude	0	0	48	34
True Latitude ☽ N. Aſcending			4	14
Reduction ſub.				11
Hourly Motion of { ☉			2	24
☽			35	12
Hourly Motion of ☽ *a* ☉			32	48
Sum of the Horizontal Parallaxes			58	32
Semidiameter of the Sun			16	5
Semidiameter of the Earth's Shadow			42	27
Semidiameter ☽			16	6
Sum			58	33
Moon's true Latitude			4	14
Parts deficient			54	19
Digits eclipſed are		20°	14	30
Scruples of Incidence			58	24
Motion of half Darkneſs			26	0
Motion from the Middle to ☍			0	21
Time of { half Duration		1*h*	46	51
half Darkneſs			47	33
from Middle to ☍ ſub.			0	38
Motion of the Sun in time of Incidence			4	16
Sum ſub. and add		1	2	40
Argument Lat. at { Beginning	11	29	45	54
End	0	1	51	14
	′	″		
Lat. ☽ at { Beginning	1	13	S.	D.
End	9	41	N.	A.

Hence,

Hence, the apparent Time at London of the		D.	h.	′	″
	Beginning 1747, *Auguſt*	8	19	1	30
	Beginning of total Darkneſs		20	0	48
	Middle, or greateſt Darkneſs		20	48	21
	True Ecliptic ☍		20	48	59
	End of total Darkneſs		21	35	54
	End of the Eclipſe		22	35	12
	Continuance of total Darkneſs		1	35	6
	Total Duration		3	33	42

The Type.

This Eclipſe will be ſeen (if the Air is clear) in all Parts of *America*, except the moſt Eaſtern Parts of *Brazil*; in *Terra Carpentaria*, and in the moſt Eaſtern known Places of the *Eaſt-Indies*. At the time of the middle of the Eclipſe, the ☽ is vertical in the Ocean, called *Mar del Zur*, Latitude 12° South, and Longitude 134° Weſt from *London*. And then the ☽ will be ſeen to riſe in *Brazil*, and to ſet at the ſame time totally Eclipſed in *Terra de Papos*, North *Philippine*, and *Ladrones-Iſles*, and places adjacent. It will be a very great Eclipſe, the Moon continues 1*h* 35′ 6″ involv'd in the dark Shadow of the Earth.

The Sixth and laſt Eclipſe this Year, will be of the Sun, on *Monday*, *Auguſt* 24th, (or if you pleaſe, on St. *Bartholomew*'s Day) at Night, and inviſible at *London*, as follows.

	D.	h.	′	″
Equal Time, true ☌ 1747, *Auguſt*	24	9	28	21
Equation of Time add			1	28
Apparent Time at *London*	24	9	29	49

Mean

	D.	h.	′	″
Mean Anomaly of ☉	2	5	19	51
Mean Anomaly of ☽	2	29	43	24
Place of the ☉ *a* ⊖, and ☽ in her Orb.	5	11	48	2
Moon's North Node	10	25	8	44
Argument Latitude	6	16	39	18
True Latitude ☽ S. A.		1	25	53
Semidiameter of the Earth's Disk			55	54
Semidiameter of the Penumbra			31	50
Sum			87	44
Difference			24	4

This will be but a very ſmall Eclipſe where viſible, which will be in the Southern Parts of *America*; for the Sun will then be vertical in the vaſt Weſtern Ocean, in Latitude 7° North, and Longitude 135° Weſt from *London*. The time of the Paſſage of the Penumbra over the Earth's Disk, will be as followeth.

		°	′	″
Declination of the ☉ North		7	9	0
Angle of the ☽'s viſible Way with Eclipt.		5	31	0
Hourly Motion of ☉			2	25
Hourly Motion of ☽			33	29
Hourly Motion of the ☽ *a* ☉			31	4
The Angle of Incidence		11	47	0
Motion of half Duration 1075″			17	55
Time of half Duration, ſub. and add			34	36
Reduction ſub.			3	32
Time of Reduction ſub. and add			6	49
Neareſt Approach of Center, Penumbra and Disk	24	9	26	17
Ecliptic ☍	24	9	33	21
Penumbra firſt touches the Disk	24	8	51	41
Penumbra goes off, and Eclipſe ends	24	10	0	53
Total Duration of this general Eclipſe		1	9	12

The Center of the Penumbra being far removed out of the Earth's Disk, is the Cauſe the Eclipſe is ſo very ſmall in itſelf.

Of the ECLIPSES *of the Sun and Moon that will happen in the Year of our Redemption* 1748.

Within the Compaſs of this Year, 1748, there will happen four Eclipſes of the Luminaries, two of each Light; two of which will be viſible at *London*, (*viz.* one of each) and the other two will not; they happen in the following order.

The firſt is a Solar Defect, on *Monday*, *January* the 18th Day, 15 Hours P. M. or on *Tueſday* Morning, inviſible at *London*, according to the annexed Calculation.

	D.	*h.*	′	″
Equal Time of the true ☌ 1748, *Jan.*	18	15	22	47
Equation of Time ſub.			13	56
Apparent Time at *London*	18	15	8	51
Mean Anomaly of ☉	7	0	27	24
☽	7	3	29	21
Place of the ☉ *a* ⊖, and ☽ in her Orb	10	9	43	4
Moon's North Node	10	17	20	58
Argument of Latitude	11	22	22	6
True Latitude ☽ S. D.			39	47
Semidiameter of the Earth's Disk			59	33
Semidiameter of the Penumbra			33	1
Sum			92	34
Difference			26	32

The Center of the Penumbra will fall within the Earth's Disk, but all the Penumbra will not, becauſe the Moon's Latitude exceeds the Difference between the Earth's Disk and Penumbra; it will be inviſible at *London* for theſe two Cauſes, *viz.* Firſt, becauſe it happens under the Horizon of *London*; and, Secondly, becauſe the Moon has great South Latitude, which in Northern Latitudes, will be increaſed by her Parallax, in Latitude, and that Sum will far exceed the Semidiameter of the Luminaries. The Sun will then be vertical to *Hollandia Nova*, Latitude 16° ½ South, and Longitude Eaſt from *London* 130°, it will be moſt conſpicuous about our Antipodes.

The Second is of the Moon, on *Wedneſday, February* 3d, near Noon, which falling ſo near the Meridian of *London*, cannot be ſeen there; a Synopſis of the Calculation ſtands thus.

	D.	h.	′	″
Equal Time of the true ☍ 1748, *Feb.*	2	23	49	0
Equation of Time ſub.			14	56
Apparent Orbit ☍	2	23	34	4
Reduction in Time add			4	3
Apparent Ecliptic ☍ at *London*	2	23	38	7
Mean Anomaly of ☉	7	15	35	14
☽	1	24	3	55
Place of the ☉ *a* ⊖	♒	25	15	22
Place of the Moon in her Orbit	4	25	15	22
Moon's North Node	10	16	32	50
Argument Latitude	6	8	42	32
True Latitude ☽ South Aſc.			45	22
Reduction ſub.			1	56
Hourly Motion of ☉			2	31
☽			31	9
Hourly Motion ☽ *a* ☉			28	38
Sum of the Horizontal Parallaxes			54	47
Semidiameters of ☉			16	26
⊖ Shadow			38	21
☽			15	10
Sum			53	31
Latitude ☽			45	22
Parts deficient			8	9
Digits Eclipſed are		3°	14	22
Scruples of Incidence			28	23
Motion from Middle to ☍			3	51
Time of Incidence ſub. and add			59	29
Time from Middle to ☍ ſub.			8	4
Motion of the ☉ in time of Incidence			2	30
Sum			30	53
Argument Latitude at Beginning	6	8	11	39
End	6	9	13	25

		'	"	
True Lat. ☽ at the	Beginning	42	42	S. A.
	End	48	1	

		D.	*h.*	'	"	
Hence, the apparent Time at *London* of the	Beginning 1748, *Feb.*	2	22	30	34	P.M.
	Middle		23	30	3	
	Oppoſition		23	38	7	
	End	3	0	29	32	
	Total Duration		1	58	58	

The Type.

This Eclipſe will only be ſeen in part of *Aſia*, and North *America*; the Moon at the middle is vertical to the great Weſtern Ocean, Latitude 13° North, and Longitude 166° Weſt from *London*. The Horizon of the riſing Moon paſſes through the North Parts of *New England*, *Hiſpaniola*, and by the moſt Weſtern Parts of *Peru*, and alſo by *Ball*, in *Groenland*: here, I ſay, the Moon will be ſeen to riſe at the time of the middle of the Eclipſe. Likewiſe, at the ſame time ſhe will be ſeen to ſet at *Atmas*, in the middle of *Tartary*, on the Weſtern Coaſts of *China*, at *Siam* in *Perſia*, at *Sumatra* and *Java*, and on the Weſtern Coaſts of *Leuwin*'s Land.

The Third Eclipſe this Year, is a great and viſible one, of the glorious Body, the Sun, (or rather of the Earth) on *Thurſday*, the 14th Day of *July*, in the Morning, at *London*, as followeth.

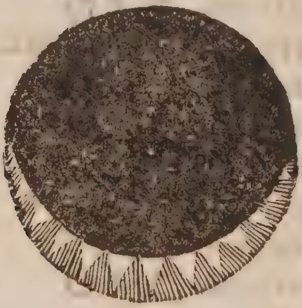
	D.	h.	′	″
Middle Time, true ☌ 1748, *July*,	13	23	22	3
Time of Reduction ſub.			2	36
Equal Time, true Ecliptic ☌	13	23	19	27
Equation of one part of Time ſub.			9	11
Apparent Time at *London*	13	23	10	16
Mean Anomaly of ☉	0	25	14	8
☽	0	10	21	16
Place of the Sun and Moon	4	2	39	59
Moon's North Node	10	7	57	54
Argument of Latitude	5	24	42	5
True Latitude ☽ North Deſc.			27	40
Reduction add			1	11
Hourly Motion of the ☉			2	23
☽			29	42
Hourly Motion of the ☽ *a* ☉			27	19
Semidiameter of the Earth's Disk			52	32
Semidiameter of the Penumbra			30	54
Sum			83	26
Difference			21	38
Parallax of Longitude ☽ *a* ☉			13	15
Latitude ☽ *a* ☉			25	41
At one Hour before the true ☌, *viz.*	13	22	10	16
Parallax of Longitude ☽ *a* ☉			21	18
Latitude ☽ *a* ☉			24	48
Interval of true and viſible ☌ ſub.			41	16
Viſible ☌ is 1748, *July*	13	22	29	0
Parallax of Longitude ☽ *a* ☉			18	50
Latitude ☽ *a* ☉			24	59
True Lat. ☽ N. D.			29	27
Viſible Latitude ☽ N. D.			4	28
Semidiameters of ☉			16	2
☽			14	52
Sum			30	54
Parts deficient			26	26
Digits Eclipſed are		9°	53	00
Scruples of Incidence			30	35
At one Hour before viſible ☌, *viz.*	13	21	29	0
Parallax of Longitude ☽ *a* ☉			26	17
Latitude ☽ *a* ☉			24	43

	D.	h.	'	"
At one after the viſible ☌, *viz.*	13	23	29	0
Parallax of Longitude ☽ *a* ☉			10	37
Parallax of Latitude ☽ *a* ☉			26	8
Time of Incidence ſub.		1	32	22
Time of Repletion add		1	36	4
Motion from the viſible ☌ to greateſt Darkneſs				22
Time from the viſible ☌ to greateſt Darkn. add			1	9

	'	"	
Viſible Lat. ☽ at Beginning	7	30	N.D.
Viſible Lat. ☽ at End	0	48	S. A.

Hence, the apparent Time at *London* of the	D.	h.	'	"	
Beginning is 1748, *July*	13	20	57	47	P.M.
Viſible ☌		22	29	0	P.M.
Greateſt Obſcuration		22	30	9	P.M.
End of the Eclipſe	14	0	6	13	P.M.
Total Duration		3	8	26	

The Type.



This Eclipſe will be very great at *London*, for more than ¾ of the Sun's Diameter will be darkened on the North ſide, as *per* Type above. At the middle of the Eclipſe, the Sun is vertical to the very end of the River *Nile*, in *Nigritia*, Latitude 19° ½ North, and Longitude 23° Eaſt from *London*.

In the next Place, I ſhall preſent the Reader with a Synopſis of the Calculation of the general Times of the Paſſage of the Penumbra over the Earth's Diſk, during the time of this Solar Eclipſe, under the Meridian of *London*.

Sun's

	°	′	″
Sun's Declination North	19	36	49
Angle of the ☽'s viſible Way	5	45	0
Firſt Angle of Incidence	70	38	0
Second	58	13	0
Inclination of the two Axes	13	12	0
Angle of Direction	18	57	0
Motion of ½ Durat. of the General Eclipſe	1	18	42
Motion of ½ Duration of the Central		44	39
Motion *a* ⊖'s Axis, to the neareſt approach. Center		9	30
Time of half Duration	2*h*	52	52
Time of ½ Duration of Central Eclipſe	1	38	5
Time *a* ⊖'s Axis to the Middle		20	52

Hence	*D.*	*h.*	′	″
The Penumbra firſt touches ⊖ Disk	13	20	22	36
The Center of the Penumbra enters ⊖		21	37	23
Meridional Sun centrally Eclipſed		22	54	36
Sun Eclipſed in the Nonageſimal Degree		23	10	16
Middle, or Center Penumbra on Axis ☽ Orb		23	15	28
Cent. Penumbra paſſes off the ⊖ Disk	14	0	53	33
Penumbra paſſes off the ⊖ Disk	14	2	8	20
Total Duration		5	45	44

Likewiſe, I have alſo determined the Latitude and Longitude of thoſe Places on the Globe where the principal Appearances of this Solar Eclipſe happeneth, which take as followeth.

	Lat. °	′		Long. à *London* °	′	
Sun begins Eclipſed as he riſes	13 N	44	=	50 W	30	*Atlant.*
Sun riſes Centrally Eclipſed	46	49	=	75 W	27	*Quebec.*
Centrally Eclipſed in the Meridian	53	27	=	16 E	21	*Dantzick.*
Centrally Eclipſed in Nonageſimal	53	23	=	8 E	22	*Mons.*
Sun's lower is touched by ☽'s upper Limb	81	40	=	16 E	21	beyond *Pole.*

	Lat. °	′	Long. à *London.* °	′	
Sun ſets Centrally Eclipſed	12	5	80 E	59	*Eaſt-Indies.*
Eclipſe ends at Sun ſetting	0	24	58 E	4	*Indian Sea.*
Sun's upper is touched by ☽'s lower, in Mer.	21	25	16 E	21	*Barbary*

The Tranſit of the Shade of the Moon over the Earth in this Solar Eclipſe.

The central Shade enters on the Earth, in Latitude 46° North, about *Quebeck* in *Canada*, in *North America*, from whence it traverſes *Hudſon*'s-*Bay*, leaving all the known Land to the Right, and paſſing by the North Pole, to Latitude 81°, which Place is its North Limit; from thence, paſſing over *Terra Incognita*, and *Great Tartary*, to the *Eaſt-Indies*, where the central Shade leaves the Earth; from thence, it paſſes over *Arabia Felix*, leaving *Egypt* to the Right, and paſſing on into the vaſt *Atlantic* Ocean, near *Cape Verde* Iſlands, leaving the *Caribbe-Iſles*, *Porto Rico*, *Hiſpaniola*, *Jamaica*, and *Cuba*, a little to the Weſt, the Limits of the Shade paſſes near *Boſton* in *New-England*: ſo that the Eclipſe will be viſible in all *Europe*, in the Weſtern Parts of *Aſia*, in the Northern Parts of *Africa*, and in the North-Eaſt Parts of *America*.

The laſt Eclipſe this Year, will be a partial and viſible one, of the Moon, (if Clouds hinder not) on *Thurſday*, the 28th Day of *July*, at 11 a Clock at Night; a Synopſis of the Calculation follows.

	D.	*h.*	′	″
Equal Time of the true ☍ 1748, *July*	28	11	47	2
Equation of Time ſub.			9	53
Apparent Time at *London* in Orb	28	11	37	9
Time of Reduction add			3	32
Apparent Time, true Ecliptic ☍	28	11	40	41

	D.	h.	'	''
Mean Anomaly of ☉	1	9	32	38
☽	6	20	0	43
Place of the ☉ *a* ⊖	♌	16	33	59
Place of the Moon in her Orb	10	16	33	59
Moon's North Node	10	7	11	27
Argument Latitude	0.	9	22	32
True Latitude ☽'s North Aſcending			48	48
Reduction ſub.			2	5
Hourly Motion of ☉			2	24
☽			37	50
Hourly Motion ☽ *a* ☉			35	26
Sum of the Horizontal Parallaxes			61	3
Semidiameters of ☉			16	3
⊖ Shadow			45	0
☽			16	37
Sum			61	37
Latitude ☽			48	48
Parts deficient			12	49
Digits Eclipſed are		4°	38	00
Scruples of Incidence			37	37
Motion from the middle to the ☍			4	9
Time of Incidence ſub. and add		1*h*	3	41
Time from the Middle to the ☍ ſub.			7	2
Motion of the Sun in the Time of Incidence			2	33
Sum			40	10
Argument Latitude at Beginning	0	8	42	22
End	0	10	2	42

	'	''	
Lat. ☽ at Beginning	45	21	N.A.
End	52	15	

Hence the apparent Time at *London* of the

	D.	h.	'	''	
Beginning 1748, *July*	28	10	29	58	P. M.
Midd. or greateſt Darkn.		11	33	39	
Ecliptic ☍		11	40	41	
End of the Eclipſe		12	37	20	
Total Duration		2	7	22	

The

The Type.

This Eclipſe will be ſeen in all *Europe*, except the North Parts of *Ruſſia*, in all *Africa*, in part of *Aſia*, and in the South Parts of *America*. At the middle of the Eclipſe, the Moon is vertical in the *Ethiopian* Ocean, 6° to the Weſt of *Cape Negro*, between that and *St. Helena*, Latitude 15°½ South. The Moon riſes in the middle of the Eclipſe to *Cuba* and *Jamaica*, and to the North-Weſt Parts of *America*, *viz.* in the Gulph of *St. Lawrence* and *Acadia*, near *Newfoundland.*

The Moon ſets in the middle of the Eclipſe, to the Eaſtern Parts of the *Mogul*'s Empire, about *Gor*, and *Cotan* in *Tartary*, and in the Northern Parts of *Muſcovia* or *Ruſſia*; with which I conclude the Eclipſes for the Year 1748.

Of the ECLIPSES *of the Sun and Moon that will happen in the Year* 1749.

THere will be five, three of the Sun, and two of the Moon, only one of each Luminary viſible at *London*; they happen as follows.

The firſt is of the Sun, on *Saturday*, *January* 7th, at 7 at Night, inviſible as follows.

	D.	*h.*	′	″
Equal Time, true ☌ 1749, *January*	7	7	16	39
Equation of Time ſub.			11	23

Apparent

	D.	*h.*	′	″
Apparent Time at *London*	7	7	5	16
Mean Anomaly of ☉	6	20	0	43
☽	5	17	8	42
Place of the ☉ *a* ⊖ and ☽ in her Orb	9	28	57	29
Moon's Node	9	28	34	2
Argument Latitude	0	0	23	27
True Latitude ☽ North Aſcending			2	2
Semidiameter of the ⊖ Disk			60	14
Semidiameter of the Penumbra			33	8
Sum			93	22
Difference			27	6

Here, the Moon's true Latitude being leſs than the Difference, ſhews that the Eclipſe will be both Total and Central, and that all the Penumbra will fall within the Disk. The Sun will then be vertical to the *Pacific* Ocean, in 20° South Latitude, and 104° Weſt Longitude from *London*. The Eclipſe will be very great and viſible in *America*, *viz.* at *New Spain*, *Terra Firma*, *Jamaica*, *Cuba*, and Places adjacent.

The Second is a Lunar Defect, inviſible at *London*, on *Monday*, *June* 19th in the Morning; a Synopſis of the Calculation follows.

	D.	*h.*	′	″
Equal Time of the true ☍ 1749, *June*	18	21	12	49
Equation of Time ſub.			2	59
Apparent Time Orbit ☍	18	21	9	50
Time of Reduction ſub.			4	26
Apparent Ecliptic ☍	18	21	5	24
Mean Anamoly of ☉	0	0	15	7
☽	4	11	15	54
Place of the ☉ *á* ⊖	3	8	30	42
Place of the ☽ in her Orbit	9	8	30	42
Moon's North Node	9	19	57	11
Argument Latitude	11	18	33	31
True Latitude ☽ South Deſcending			59	26
Reduction add			2	31
Hourly Motion of ☉			2	23
☽			36	24

			'	''
Hourly Motion of ☽ *a* ☉			34	1
Sum of the Horizontal Parallaxes.			59	43
Semidiameters of ☉			16	0
Semidiameters of ⊖ Shadow			43	43
Semidiameters of ☽			16	21
Sum			60	4
Latitude ☽			59	26
Parts deficient			0	38
Digits Eclipſed are		0°	13	55
Scruples of Incidence			8	42
Motion from ☍ to the Middle			5	4
Time of Incidence, ſub. and add			15	21
Time from ☍ to the Middle add			8	57
Motion ☉ in time of Incidence				36
Sum			9	18
Argument of Lat. at Beginning	11	18	24	13
Argument of Lat. at End	11	18	42	49

		'	''	
Lat. ☽ at Beginning	1	0	14	S. D.
Lat. ☽ at End	0	58	39	

Hence the apparent Time at *London* of the

	D.	h.	'	''
Beginning 1749, *June*	18	20	59	0
Ecliptic ☍		21	5	24
Middle, or greateſt Darkneſs		21	14	21
End		21	29	42
Total Duration			30	42

The Type.

This Eclipſe is ſo very ſmall, that it is ſcarce worth my Time and Ink to write upon it. The Moon is vertical at the middle of the Eclipſe; in *Mar del Zur*, Latitude 23° South, and Longitude from *London* 140°

Weſt. It will be ſeen in the Weſtern Parts of *America*, in the vaſt Ocean, bounding *America* and *Aſia*, and in *Terra de Papos*, that is, the moſt Eaſtern known Parts of *Aſia*.

The Third is a Solar Eclipſe, on *Monday*, *July* 3d, near Noon, but inviſible at *London*, as I thus prove.

	D.	*h.*	′	″
Equal Time of the true ☌ 1749, *July*	3	0	31	9
Equation of Time ſub.			5	12
Apparent Time	3	0	25	57
Time of Reduction add			1	23
Apparent Ecliptic ☌	3	0	27	20
Mean Anomaly of ☉	0	14	11	7
Mean Anomaly of ☽	10	15	58	58
Hourly Motion of ☽ *a* ☉			28	15
Place of the Sun and Moon	3	21	59	0
North Node Moon	9	19	11	56
Argument Latitude	6	2	47	4
True Latitude Moon S. A.			14	33
Reduction ſub.				39
Parallax of Longitude ☽ *a* ☉				10
Parallax of Latitude ☽ *a* ☉			27	1
Semidiameter of Earth's Disk			53	20
Semidiameter of Penumbra			31	5
Sum			48	25
Difference			22	15

By this Parallax of Latitude, at the true ☌, I ſee that the viſible Latitude, at the viſible ☌, will far exceed the Sum of the Semidiameters of the Luminaries, ſo that the Shade of the Moon will not then reach ſo far as the Parallel of *London*, but in the more Southern Parts of the Globe it will be a great Eclipſe, for all the Penumbra doth then all fall within the Diſk: it will be Central and Annular, for the Sun's Semidiameter exceeds the Moon's by 57″. The Sun is then vertical to *St. Anthony*'s River, on the Weſtern Coaſts of *Barbary*, Latitude 21° North, Longitude 8° Weſt à *London*. It will be ſeen in *Guinea*, and very great at *St. Helena*.

The Fourth is of the Moon, and viſible at *London*, if the Air be clear, on *Tueſday*, *December* 12th, in the Evening, according to the following Calculation.

	D.	*h.*	′	″
Equal Time of the true ☍ 1749, *Dec.*	12	8	4	49
Time of Reduction ſub.			3	40
Middle Time, Ecliptic ☍	12	8	1	9
Firſt part of Equation of Time ſub.				49
Apparent Time	12	8	0	20
Mean Anomaly of ☉	5	24	9	46
☽	9	6	36	56
Place of the ☉ *a* ⊖	9	2	14	13
Place of the ☽ in her Orbit	3	2	14	13
Moon's North Node	9	10	36	55
Argument Latitude	5	21	37	18
True Latitude ☽ N. D.			43	39
Reduction add			2	31
Hourly Motion of the ☽ *a* ☉			30	29
Sum of the Horizontal Parallaxes			56	29
Semidiameters of ☉			16	30
⊖ Shadow			39	59
☽			15	37
Sum			55	36
Latitude ☽			43	39
Parts deficient			11	57
Digits eclipſed are		4°	35	30
Scruples of Incidence			34	26
Motion from ☍ to the Middle			3	43
Time of Incidence ſub. and add		1*h*	7	48
Time from ☍ to the Middle			7	19
Motion of the ☉ in the time of Incidence			2	53
Sum			37	19
Argument Lat. at Beginning	5	20	59	59
End	5	22	14	37
	′	″		
Lat. ☽ at Beginning	46	53	N. D.	
End	40	26		

Hence, the apparent Time at *London* of the

	D.	h.	'	"
Beginning 1749, *December*	12	6	59	51
Ecliptic ☍		8	0	20
Middle, or greateſt Darkneſs		8	7	39
End of the Eclipſe		9	15	27
Total Duration		2	15	36

The Type.

This Eclipſe will be ſeen in *Europe*, *Africa*, in almoſt all *Aſia*, and in the North-Eaſt Parts of *America*; the Moon is vertical at the middle of the Eclipſe, to the moſt Eaſtern Parts of *Turkey* in *Aſia*, at the Entrance of the *Perſian* Gulph, Latitude 23° North, Longitude 58° Eaſt from *London*.

The Moon riſes Eclipſed to the North-Eaſt Parts of *New England*, and in the Gulph of *St. Lawrence*, in *North America*; and ſets in the middle of the Eclipſe, at *Terra de Papos*, the moſt Eaſterly known Parts of the *Eaſt-Indies*.

The Fifth and laſt Eclipſe this Year, is of the Sun, viſible at *London*, (if the Air be ſerene) on *Thurſday*, the 28*th* of *December*, in the Morning, as follows.

	D.	h.	'	"
Middle Time of the true ☌ 1749, *Dec.*	27	21	42	47
Time of Reduction add			3	21
Equal Time, true Ecliptic ☌	27	21	46	8
Equation of Time ſub.			6	5
Apparent Time Ecliptic ☌	27	21	40	3
Mean Anomaly of ☉	6	9	30	25
Mean Anomaly of ☽	4	0	1	12
Place of the Sun and Moon	9	18	6	53
Moon's Node	9	9	47	7
Argument Latitude	0	8	19	46

True

			′	″
True Latitude ☽ N. A.			43	2
Reduction ſub.			1	5
Hourly Motion of ☽ *a* ☉			33	
Semidiameter of the Earth's Disk			58	
Semidiameter of the Penumbra			32	4
Sum			90	4
Difference			25	1
Parallax of { Longitude ☽ *a* ☉			13	2
Parallax of { Latitude ☽ *a* ☉			55	31
At one Hour before the true ☌	27	20	40	
Parallax of { Longitude ☽ *a* ☉			20	3
Parallax of { Latitude ☽ *a* ☉			54	1
Viſible hourly Motion of ☽ *a* ☉			25	5
Time from true ☌ to the viſible ſub.			30	5
Viſible ☌ is 1749, *December*	27	21	9	
Parallax of { Longitude ☽ *a* ☉			17	1
Parallax of { Latitude ☽ *a* ☉			54	5
Viſible Latitude ☽ South Deſc.			13	
Parts deficient			19	3
Digits Eclipſed are		7°	8	4
Scruples of Incidence			30	
Motion from viſible ☌, to greateſt Obſcuration			1	
Time from viſible ☌, to greateſt Obſcurat. add			2	3
Time of Incidence ſub.		1	7	1
Time of Repletion add		1	11	

	′	″	
Lat. ☽ ſeen at { Beginning	13	45	S. D
Lat. ☽ ſeen at { End	11	22	

Hence, the apparent Time at *London* of the		D.	h.	′	″
	Beginning 1749, *December*	27	20	4	2
	Viſible ☌		21	9	4
	Greateſt Obſcuration		21	11	4
	End of the Eclipſe		22	22	5
	Total Duration		2	18	2

This Eclipſe will (if the Air be clear) be well worth the Learned Aſtronomers time to obſerve it at *London*; which will appear as the following Type ſheweth.

The Type.

At the time of the middle of the Eclipſe, the Sun is vertical to the South-Weſt Part of *Madagaſcar*. The general Times of this Eclipſe, are as follow.

	°	′	″
Declination of the ☉ South	22	16	0
Angle of the ☽'s viſible Way	5	37	0
Firſt Angle of Incidence	61	25	0
The Second	41	34	0
Inclination of the two Axes	7	43	0
Angle of Direction	13	20	0
Motion of half Duration	1	19	40
Motion of half Duration of Central		39	29
Motion from the Perpendicular to ☽'s Axis		10	17
Time of half Duration	2	24	16
The Time of ½ Central	1	9	41
Time from Middle to ⊖'s Axis add		18	37

Hence

	D.	h.	′	″
The Penumbra firſt touches 1749 *December*	27	19	9	5
Cent. Penumbra touches ⊖'s Disk		20	23	40
Middle, Center, Penumbra on Axis. ☽'s Orb		21	33	21
Eclipſed in the Nonageſimal Deg.		21	40	3
Eclipſed in the Meridian		21	51	58
Cent. Penumbra paſſes off the Disk		22	43	2
It wholly leaves the ⊖'s Disk		23	57	37
Total Duration		4	48	32

And I have likewiſe determined the particula Places on the Globe where

		Lat. °	′	Long. °	′	
The	Sun begins Eclipſed as he riſes	14	5 S	23 W	10	*Ethiopia.*
	Centrally Eclipſed as he riſes	32	9 S	50 W	50	*St. Domingo.*
	Centrally Eclipſed in Nonageſimal	25	59 N	14 E	53	*Barbary.*
	Centrally Eclipſed in Meridian	28	4 N	32 E	1	*Red-Sea.*
	Sun's lower Limb touched	87	11 N	32 E	1	*N. of Greenland*
	Sun's upper Limb touched	10	27 S	32 E	1	*Zimbas.*
	Sun ſets Centrally Eclipſed	54	37 S	144 E	27	*South-Sea.*
	Eclipſe ends at Sun ſetting	38	11 S	109 E	23	*Holland. Nova*

The Tranſit of the Shade of the Moon over the Eart in this Solar Eclipſe.

The central Shade enters on the Earth, in Latitude of 30° 9′ South, about *St. Domingo*, in the Country o *Paraguay*, in South *America*, from whence it traverſes *Brazil*, and the vaſt *Atlantic* Ocean, including *Africa* and *Europe* to the Eaſt, and paſſing on within the Arctic Circle, to the Latitude 87° 11′, where the Sun's lower is touched by the Moon's upper Limb, in the Meridian; from thence, it paſſes through the Eaſt Part of *Tartary*, leaving *Mare Japonicum* to the Eaſt, and paſſing by the *Philippine* Iſlands, through *Terra de Papos*, and *Van Diemen*'s Land, into the unknow unknown Southern Ocean, to Latitude 54° 37′, from thence it paſſes the *Oceanus Orientalis*, including the Iſland of *Madagaſcar*, paſſing over *Cafraria*, leaving the *Cape of Good Hope* to the South, and ſo on through the *Atlantic* Ocean, to *St. Domingo* again, where the riſing Sun will be ſeen centrally Eclipſed. This Eclipſe where Central, (which is about *Terra de Natal*, on the Eaſtern Coaſt of the Country of *Cafraria*, in the South Part of *Africa*) will be Annular, or a ſmall Ring of Light round the Moon. The Breadth of the Shade from North to South is 5858, and the Length from Eaſt to Weſt 11717 *Engliſh* Miles. If, on the Terreſtrial Globe, you draw a Path with Chalk to the Places abovementioned; you may plainly ſee what places fall within the Shade, and what do not. And here I am come to a concluſion of my intended Task, which I ſhall conclude with the Words of the wiſe Man, Eccleſt. 7. 8. *Better is the End of a thing, than the Beginning.* In this I hope the skilful Aſtronomer, Navigator, and Geographer will find that which will be a help to rectify the Maps and Charts in the Longitude of Places.

The Times of the Tranſit of the Planets, Venus *and* Mercury, *over the Sun's Disk, with a Synopſis of the Calculations; from* Anno 1720, *to* Anno 1799, *incluſive: under the Meridian of* London.

THIS Excellent Part of Aſtronomy that I am here going to treat of, was wholly unknown to the Aſtronomers of ancient Times; the firſt that ever made this Diſcovery, was the famous Mr. *Jeremy Horrox*, who in the Year 1639, *November* 24*d* 3*h* 19′ P. M. obſerved the Planet *Venus* in the Sun's Disk, the Longitude of the Sun (according to *Aſtronomia Carolina*, from whence I have deduced the following

Calculations) was then ♐ 12° 22′ 30″ of *Venus*, ♐ 12° 33′ 35″ with Lat. 10′ 30″ South.

The Ice being now broke, gave way for others to obſerve the like Appearances; and in the Year 1661, *April* 25*d* 5*h* P. M. the Planet *Mercury* was ſeen in the Sun by *John Hevelius*, at *Dantzick*. By this time the Eyes of moſt of the Aſtronomers in *Europe* began to be open, and amongſt the reſt, our Countryman Mr. *Thomas Street* began to take notice of theſe rare Phænomena; and next unto him, the incomparable Dr. *Edmund Halley*, who has given us a Series of the Times in which *Venus* and *Mercury* will be ſeen in the Sun's Diſcus, for the laſt paſt, and preſent Age; and in *Philoſophical Tranſactions*, N°. 348. he has given us a large Scheme of *Venus* in the Sun, *Anno* 1761, *May* 26th, in the Morning; a particular Account of the Time and Tranſit you will find in its proper Place in the following Sheets. Alſo in his Catalogue of the Southern Stars obſerved at *St. Helena*, in the Year 1677, he obſerved *Mercury* in the Sun's Disk, on *October* 28th, in the Forenoon; to which I refer the inquiſitive Reader.

Laſtly, I have in my Treatiſe of Eclipſes given you an account of the Planets *Venus* and *Mercury* being ſeen in the Sun for this Century, from the time of the Publication of that Book; and two Tranſits of *Mercury* over the ☉'s Disk, in this Century, before that Book was writ, happened thus.

Anno 1707, *April* 24th, at Midnight, ☿ paſſed over the Sun; and

Anno 1710, *October* 26th, near Midnight, the ſame Planet alſo paſſed over the Sun. In the former of theſe, his Latitude was not ½ North, and in the latter, about the ſame South Latitude, *Anno* 1720, *April* 26*d* 21*h* 25′ 19″ P. M. *Mercury* was conjoined with the Sun, but then had 17′ 12″ of South Latitude, which exceeds the Sun's Semidiameter thereby 1′ 27″, proves he could not be ſeen then in the Sun, though very near his Periphery: and, becauſe theſe three are paſt, I ſhall alſo paſs by the Calculation of them.

Anno 1723, *October* 29th, *Mercury* will tranſit the Sun's Disk; a Synopſis of the Calculation follows.

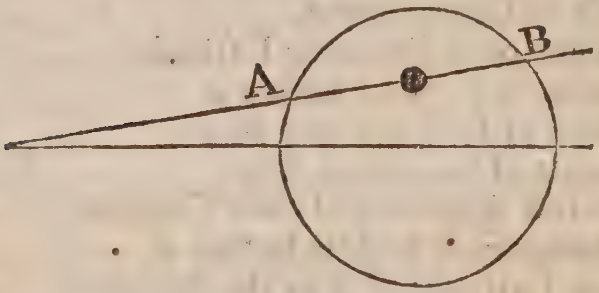
	D.	h.	′	″
Equal Time true ☌ at *London*, 1723, *October*	29	6	17	25
Equation of Time add			16	2
Apparent Time true ☌	29	6	33	27
Mean Anomaly of ☉	4	10	43	52
Mean Anomaly of ☿	5	12	53	41
True Diſtance of ☉ *a* ⊖ 98887	4.995141			
True Diſtance of ☿ *a* ☉ 31406	4.497019			
True Diſtance of ☿ *a* ⊖ 67481				
Geocentric Long. of ☉ and ☿ ℞	7	16	46	36
Geocentric Latitude N. A.			6	16
Anomaly of Commutation	6	0	0	0
Inclination, or Heliocentric Latitude			13	26
Elongation to 6 Hours before ☌			35	21
Difference of Latitude in 6 Hours			5	12
The Angle of the viſible Way		8°	22	5
The neareſt Approach of their Centers			6	12
The Motion from middle to true ☌				54
The true Latitude of ☿ at the Middle			6	8
The Motion of half the viſible Way			14	51½
The Motion of half Duration			14	42
Difference Latitude between Middle, Beg. and End 129″.7			2	9.7
☿ true Lat. *a* ⊖ When he firſt touches			3	58
☿ true Lat. *a* ⊖ When he goes off the Sun			8	17.7
Time from true ☌ to the Middle ſub.			9	10
Time of half Duration ſub. and add		2h	29	42
The Arch of ☉'s Perimeter, from Ecliptic firſt touch		14	35	0
The Arch, ☉'s Perimeter, from Ecliptic when he goes off ☉		31	1	0
Apparent Semidiameter ☿ 4″ of ☉			16	6

Hence, the apparent Time at *London* of the

	D.	h.	′	″	
Central Ingreſs, 1723, *October* A	29	3	54	35	P.M.
Middle of the Eclipſe		6	24	17	
True Conjunction		6	33	27	
Central Egreſs, or End, B		8	53	59	
Total Duration		4	59	24	

☉ Declination 16° 57′ S.
☉ A. D. 22 33 = 1*h* 30′ 12″
☉ ſets at 4*h* 29′ 48″, ſo that ☿ touches the Sun 35′ 13″ before ☉ ſets at *London*; and ♀ is then a little to the Left above.

The Type.



Anno 1730, *Sol* and *Mercury* are conjoined in ♏ 10° 0′ 46″, *October* 22*d* 5*h* 42′ 45″ P. M. Sun's Semidiameter 16′ 5″, and ☿ Latitude 17′ 4″ South; this proves it cannot be ſeen on the Sun's Disk then.

Anno 1736, the Planet *Mercury* will appear on the upper Part of the Sun's Disk, on the laſt Day of *October*; a Synopſis of the Calculation followeth.

	D.	h.	′	″
Equal Time of the true ☌ at *London*, 1736, *October*	31	0	8	42
Equation of Time add			15	44
Apparent Time of the true ☌	31	0	24	36
Mean Anomaly of ☉	4	13	6	49
Mean Anomaly of ☿	5	14	31	33

True

True Diſtance of	☉ *a* ⊖	98833	4.994901
	☿ *a* ☉	31192	4.494040
	☿ *a* ⊖	67641	4.830210

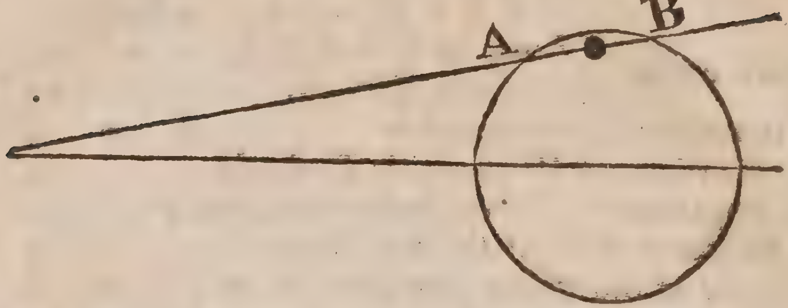
	D.	*h.*	′	″
Geocentric Long. of ☉ and ☿ ℞.	7	19	23	16
Geocentric Latitude ☿ N. A.			14	17
Anomaly of Commutation	6	0	0	0
Inclination, or Heliocentric Latitude			30	58
Elongation to 6 Hours before the true ☌			35	27
Difference of Latitude in 6 Hours			5	4
Angle of the viſible Way over the ☉		8	8	0
The neareſt approach of their Centers			14	8
Motion from the middle to true ☌			2	0
True Latitude of ☿ at the middle N. A.			13	59
Motion of half the viſible Way over the ☉			7	42
Motion of half Duration			7	38
Difference, Latitude, between Middle, Beginning and End, ſub. and add			1	5
☿ true Lat. *a* ⊖ When he firſt touches the ☉			12	54
☿ true Lat. *a* ⊖ When he goes off the Sun			15	4
Time from the Middle to the true ☌ ſub.			20	18
Time of half Duration ſub. and add		1	17	31
Arch of the ☉'s Perim. when ☿ touches		53	15	0
Arch of the ☉'s Perim. when he goes off		69	21	0
Apparent Semidiameter ☿ 4″ of ☉			16	6

Hence, the apparent Time at *London* of the

	D.	*h.*	′	″	
Central Ingreſs, is, 1736, *October* A	30	22	46	37	P.M.
Middle of the Eclipſe	31	0	4	8	P.M.
True Conjunction		0	24	26	P.M.
Central Egreſs, or End, B		1	21	39	P.M.
Total Duration		2	35	2	

The

The Type.



Anno 1740, *April* 21ſt, in the Weſtern Parts of *America*, the Planet *Mercury* may be ſeen to paſs over the Sun, but at *London* inviſible; a Synopſis of the Calculation ſtands thus.

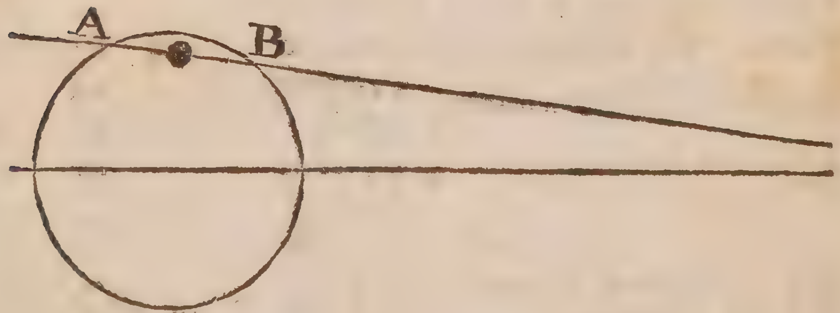
			D.	h.	′	″
Equal Time of the true ☌ at *London*, 1740, *April*			21	12	14	6
Equation of Time add					3	19
Apparent Time of the true ☌			21	12	17	25
Mean Anomaly of ☉			10	3	21	50
Mean Anomaly of ☿			10	15	40	0
True Diſtance of ☉ *a* ⊖	100973	5.004[illegible]05				
True Diſtance of ☿ *a* ☉	45064	4.653833				
True Diſtance of ☿ *a* ⊖	55909	4.747481				
Geocentric Long. ☉ and ☿ ℞.			♉	12	47	34
Geocentric Latitude ☿ N. D.					13	50
Anomaly of Commutation			6	0	0	0
Inclination, or Heliocentric Latitude N. D.					17	10
Elongation to 6 Hours before ☌					23	34
Difference of Latitude to 6 Hours before ☌					4	13
Angle of the viſible Way				10	8	39
Neareſt approach of their Centers					13	37
Motion from the true ☌, to the Middle					2	24
Latitude of ☿ at the Middle N. D.					13	24
Motion of half the viſible Way					7	57
Motion of half Duration					7	49
Difference Latitude, between Begin. Middle, and End					1	24

☿ true

			′	″
☿ true Lat. *a* ⊖	When he firſt touches ⊙ N. D.		14	48
	When he goes off the ⊙ N. D.		12	0
Time from the true ☌, to the Middle add			36	40
Time of half Duration ſub. and add		1*h*	59	32
Arch of the ⊙'s Periphery when ☿ firſt touches		69°	52	0
Arch of the ⊙'s Periphery when ☿ goes off		49	35	0
Apparent Semidiameter ☿ 6″, and of the ⊙			15	46

Hence, the apparent Time at *London* of the		*D.*	*h.*	′	″	
Central Ingreſs, 1740, *April*	A	21	10	54	33	P.M.
True Conjunction			12	17	25	P.M.
Middle of the Eclipſe			12	54	5	P.M.
Central Egreſs, or End	B		14	53	37	P.M.
Total Duration			3	59	4	

The Type.



Anno 1743, *October* 25th, will be a viſible Tranſit of *Mercury* over the Sun, and viſible at *London* by the help of a good Teleſcope; the Requiſits of the Calculation ſtand thus.

	D.	*h.*	′	″
Equal Time of the true ☌ at *London*, 1743, *October*	24	23	45	0
Equation of Time add		.	16	18
Apparent Time of the true ☌	25	0	1	18

Mean

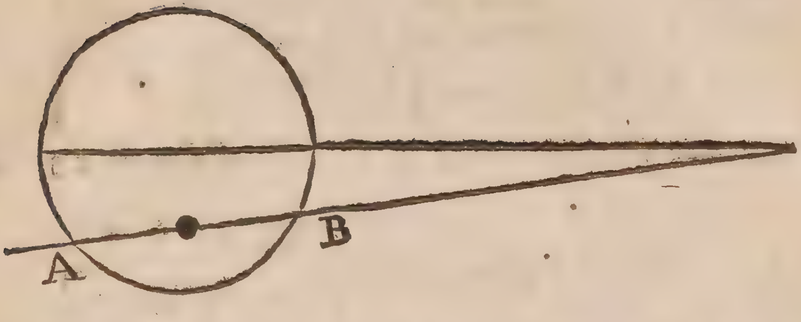
			D.	h.	'	''
Mean Anomaly of	☉		4	6	24	13
	☿		5	9	54	37
The Diſtance of	☉ *a* ⊖	98992	4.995600			
	☿ *a* ☉	31493	4.498217			
	☿ *a* ⊖	67499	4.829297			
Geocentric	Long. ☉ and ☿ ℞.		♏	12	37	24
	Latitude S. D.				8	45
Anomaly of Commutation			6	0	0	0
Inclination, or Heliocentric Latitude					18	44
Elongation to 6 Hours					35	4
Difference of Latitude in 6 Hours					5	7
Angle of the viſible Way				8°	18	5
Neareſt Approach of their Centers					8	39
Motion from the true ☌, to the Middle add					1	15
True Latitude of ☿ at the Middle S. D.					8	38
Motion of half the viſible Way					13	33
Motion of half Duration					13	24
Difference of Latitude, between Middle, Beginning and End					1	57
☿ Lat:	at the Beginning S. D.				10	36
	at the End S. D.				6	41
Time from true ☌ to the Middle add					12	50
Time of half Duration ſub. and add				2	17	40
Arch of the ☉'s Perimeter	Beginning			41	14	0
	End			24	34	0
Apparent Semidiameter ☿ 4'', of ☉					16	5

Hence, the apparent Time at *London* of the

		D.	h.	'	''	
Central Ingreſs, 1743, *October*	A	24	21	56	28	P.M.
True Conjunction		25	0	1	18	
Middle of the Eclipſe			0	14	8	
Central Egreſs, End	B		2	31	48	
Total Duration			4	35	20	

The

The Type.



Anno 1753, on *Sunday*, *April* 25th, in the Morning, *Mercury* will be ſeen to make a black Spot in the Sun's Body, according to the following Calculation.

			D.	*h.*	′	″
Equal Time of the true ☌ 1753, *April*			24	20	42	50
Equation of Time add					3	37
Apparent Time of the true ☌				20	46	27
Mean Anomaly	☉		10	6	20	50
	☿		10	19	47	30
Diſtance of	☉ *a* ⊖	101046	5.004518			
	☿ *a* ☉	45348	4.656557			
	☿ *a* ⊖	55698	4.745839			
Geocentric	Long. ☉ and ☿ ℞.		♉	15	53	22
	Latitude S. A.				3	19
Anomaly of Commutation			6	0	0	0
Inclination, or Heliocentric Latitude S. A.					4	3
Elongation to 6 Hours before the true ☌					23	24
Difference of Latitude in 6 Hours					4	18
Angle of the viſible Way				10	24	45
Neareſt Approach of their Centers					3	15
Motion from the Middle, to the true ☌						35
True Latitude of ☿ at the Middle					3	4
Motion of half the viſible Way					15	24
Motion of half Duration					15	9
Difference Latitude, between Middle, Beginning and End, ſub. and add					2	47

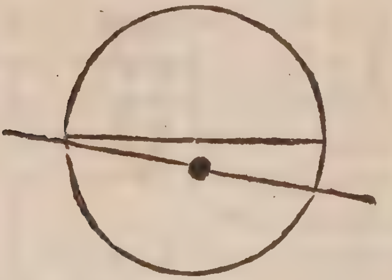
		′	″
Lat. ☿ ſeen *a* ⊖ Beginning S. A.		0	17
End S. A.		5	51
Time from the true ☌, to the Middle ſub.		9	4
Time of half Duration ſub. and add	3	53	16
Arch of ⊙'s Perimeter at Beginning	1	2	0
End	21	48	0
Apparent Semidiameter ☿ 6″, and of the ⊙		15	45

Hence, the apparent Time at *London* of the

	D.	h.	′	″	
Central Ingreſs, 1753, *April*	24	16	44	7	P.M.
Middle of the Eclipſe		20	37	23	
True Conjunction		20	46	27	
Central Egreſs, or End	25	0	30	39	
Total Duration		7	46	32	

⊙ riſes at *London* that Morning at 4*h* 31′ 40″, and the Eclipſe begins after the ⊙ is up 12′ 27″.

The Type.



Anno 1756, on *Sunday*, *October* 27th, in the Morning, *Mercury* will Tranſit the Sun's Disk, and will be part viſible at *London*, as follows.

	D.	h.	′	″
Equal Time true ☌ at *London*, 1756, *October*	26	17	42	42
Equation of Time add			16	11
Apparent Time true ☌	26	17	58	53

Mean

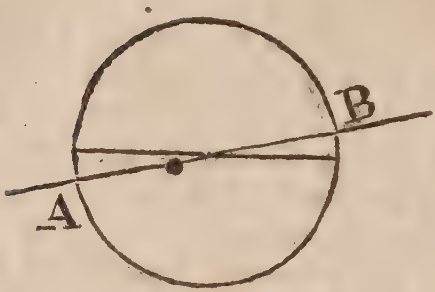
		D.	*h.*	′	″
Mean Anomaly of ☉		4	8	47	26
Mean Anomaly of ☿		5	11	33	34
True Diſtance of ☉ *a* ⊖	98933	4·995343			
True Diſtance of ☿ *a* ☉	31378	4·496629			
True Diſtance of ☿ *a* ⊖	67555	4.829657			
Geocentric Long. ☉ and ☿ ℞.		♏	15	13	59
Geocentric Latitude ☿ S. D.					55
Anomaly of Commutation		6	0	0	0
Inclination, or Heliocentric Latitude S. D.				1	3
Elongation to 6 Hours before ☌				35	16
Difference of Latitude in 6 Hours				4	42
Angle of the viſible Way over ☉			8°	16	34
Neareſt Approach of their Centers					54
Motion from the true ☌, to the Middle					8
True Latitude of ☿ at the Middle S. D.					53
Motion of half the viſible Way				16	3
Motion of half Duration				15	53
Difference of Latitude, between Middle, Beginning and End				2	18
☿ Lat. ſeen *a* ⊖ at Beginning S. D.				3	11
☿ Lat. ſeen *a* ⊖ at End N. A.				1	25
Time from the true ☌, to the Middle add				1	20
Time of half Duration ſub. and add			2	42	23
Arch of ☉'s Perimeter at Beginning S.			11	28	0
Arch of ☉'s Perimeter at End North			5.	6	0
Apparent Semidiameter ☿ 4″, and of ☉				16	5

Hence, the apparent Time at *London* of the

	D.	*h.*	′	″	
Central Ingreſs, 1756, *October* A	26	15	17	50	P.M.
True Conjunction		17	58	53	P.M.
Middle of the Eclipſe		18	0	13	P.M.
Central Egreſs, or End B		20	42	36	P.M.
Total Duration		5	24	46	

At *London*, ☉ riſes that Morning at 7*h* 27′ 16″, ſo ☿ continues upon the ☉ 1*h* 15′ 20″ after he is riſen.

The Type.



Anno 1761, on *Saturday*, *May* 26th, in the Morning, the glorious Planet *Venus* will paſs over the Sun, and be viſible at *London*, (if the Air favour us) as follows.

		D.	*h.*	′	″
Equal Time of the true ☌ at *London*, 1761, *May*		25	22	57	15
Equation of Time add				1	52
Apparent Time at *London* of the ☌		25	22	59	7
Mean Anomaly of ⊙		11	6	56	47
Mean Anomaly of ♀		10	10	25	23
True Diſtance of ⊙ *a* ⊖	101698	5.006885			
True Diſtance of ♀ *a* ⊙	72670	4.861357			
True Diſtance of ♀ *a* ⊖	29028	4.462817			
Geocentric Long. ⊙ and ♀ ℞		♊	15	46	50
Geocentric Latitude ♀ S. A.				6	41
Anomaly of Commutation		6	0	0	0
Inclination, or Heliocentric Latitude S. A.				2	46
Elongation to 6 Hours				23	35
Difference of Latitude to 6 Hours				3	46
Angle of the viſible Way			8°	33	54
Neareſt Approach of their Centers				6	37
Motion from the Middle, to the true ☌					59
True Latitude of ♀ at the Middle				6	33
Motion of half the viſible Way				14	11
Motion of half Duration				14	2
Difference of Latitude, between Beginning, Middle and End				2	7

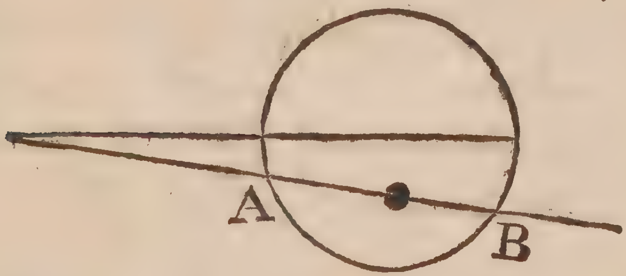
♀ Lat.

		′	″
♀ Lat. *a* ⊖ Beginning S. A.		4	26
End S. A.		8	40
Time from the true ☌, to the Middle ſub.		15	2
Time of half Duration ſub. and add	3	33	48
Arch of ⊙'s Perimeter at Beginning	16	27	0
End	33	35	0
Apparent Semidiameter ♀ 36″, and of ⊙		15	40

Hence, the apparent Time at *London* of the

	D.	*h.*	′	″	
Central Ingreſs, 1761, *May* A	25	19	10	17	P.M.
Middle of the Eclipſe		22	44	5	
True Conjunction		22	59	7	
Central Egreſs, or End B	26	2	17	53	
Total Duration		7	7	36	

The Type.



Anno 1769, on *Sunday*, *May* 24th, (in the Morning,) the glorious Planet *Venus* will be ſeen under the Meridian of the *Philippine* Iſles, and Eaſtern Parts of *China*, to paſs over the Sun's Disk; but in reſpect to the Meridian of *London*, is part inviſible, and happens as followeth.

	D.	*h.*	′	″
Equal Time of the true ☌ 1769, *May*	23	15	39	0
Equation of Time add			2	14
Apparent Time at *London*	23	15	41	14
Mean Anomaly of ⊙	11	4	37	43
♀	10	8	9	10

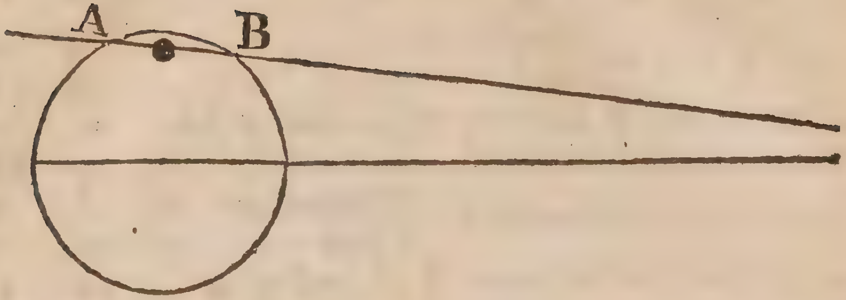
		D.	h.	′	″
True Diſtance of ☉ *a* ⊖	101570	5.006767			
True Diſtance of ♀ *a* ☉	72654	4.861263			
True Diſtance of ♀ *a* ⊖	28916	4.461138			
Geocentric Long. ☉ and ♀ ℞		♊	13	38	28
Geocentric Latitude ♀ N. D.				13	9
Anomaly of Commutation		6	0	0	0
Inclination, or Heliocentric Latitude N. D.				5	15
Elongation to 6 Hours before ☌				23	39
Difference of Latitude to 6 Hours				3	32
Angle of the viſible Way over the ☉			80°	29	50
Neareſt Approach of their Centers				13	0
Motion from the Middle, to the true ☌				1	55
Latitude of *Venus* at the Middle				12	51
Motion of half the viſible Way				8	44
Motion of half Duration				8	38
Difference Latitude, between Beg. Middle, and End				1	17
Lat. ♀ *a* ⊖ at Beginning N. D.				14	9
Lat. ♀ *a* ⊖ at End N. D.				11	34
Time from true ☌, to the Middle add				29	16
Time of half Duration ſub. and add			2	11	31
Arch of the ☉'s Perimeter at Beginning			64	36	0
Arch of the ☉'s Perimeter at End			47	37	0
Apparent Semidiameter ♀ 36″, and of ☉				15	40

Hence, the apparent Time at *London* of the

	D.	h.	′	″	
Central Ingreſs, 1769, *May* A	23	13	58	59	P.M
True Conjunction		15	41	14	P.M
Middle of the Eclipſe		16	10	30	P.M
Central Egreſs, or End B		18	22	1	P.M
Total Duration		4	23	2	

The

The Type.



Anno 1769, on *Thurſday*, *October* 29th, at Midnight, the Planet *Mercury* will be ſeen within the Sun, but inviſible at *London*; though to them that ſail a little to the Weſtward of *California*, the moſt Weſternly Parts of *America*, will have it near their Meridian, and conſequently viſible to them; at *London*, a Synopſis of the Calculation ſtands thus.

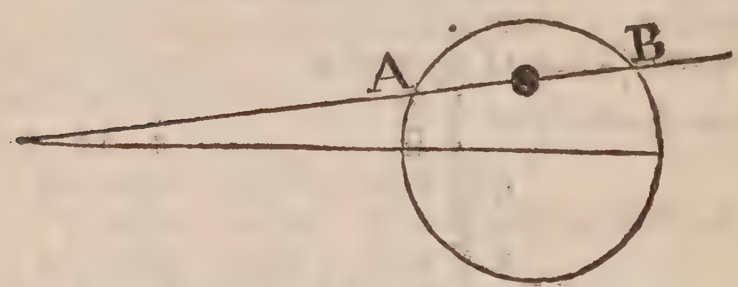
	D.	h.	′	″
Equal Time of the true ☌ 1769, *Oct.*	29	11	36	57
Equation of Time add			15	58
Apparent Time of the true ☌	29	11	52	55
Mean Anomaly of ☉	4	11	10	29
Mean Anomaly of ☿	5	13	11	56
True Diſtance of ☉ *a* ⊖ 98877	4.995095			
True Diſtance of ☿ *a* ☉ 31272	4.495151			
True Diſtance of ☿ *a* ⊖ 67605	4.829979			
Geocentric Long. ☉ and ☿ ℞	♏	17	50	37
Geocentric Latitude ☿ N. A.			7	42
Anomaly of Commutation	6	0	0	0
Inclination, or Heliocentric Latitude N. A.			16	38
Elongation to 6 Hours before the ☌			35	23
Difference Latitude to 6 Hours			5	5
Angle of the viſible Way over ☉		8°	10	32
Neareſt Approach of their Centers			7	37
Motion from the Middle, to the true ☌			1	5
Latitude of ☿ at the Middle			7	32
Motion of half the viſible Way			14	11
Motion of half Duration			14	2

		′	″
Difference Latitude, between Middle, Beginning, and End		2	1
Lat. ☿ *a* ⊖ at Beginning		5	31
End		9	33
Time from the Middle, to the true ☌ ſub.		11	2
Time of half Duration ſub. and add	2	22	50
Arch of ⊙'s Perimeter at Beginning	20	5	0
End	36	26	0
Apparent Semidiameter ☿ 4″, and of ⊙		16	6

Hence, the apparent Time at *London* of the

	D.	h.	′	″	
Central Ingreſs, 1769, *October* A	29	9	19	3	P.M.
Middle of the Eclipſe		11	41	53	
True Conjunction		11	52	55	
Central Egreſs, or End B		14	4	43	
Total Duration		4	45	40	

The Type.



Anno 1776, on *Saturday*, the 22*d* Day of *October*, *Mercury* paſſes over the Sun, it will be viſible in *America*; (if Clouds interpoſe not) a Synopſis of the Calculation under the Meridian of the famous City of *London*, preſents itſelf to your View, thus.

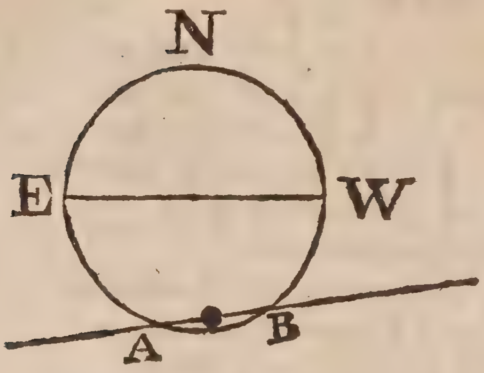
	D.	h.	′	″
Equal Time of the true ☌ 1776, *Oct.*	22	11	4	36
Equation of Time add			16	23
Apparent Time at *London*	22	11	20	59

Mean

		D.	h.	′	″
Mean Anomaly of ☉		4	4	27	34
Mean Anomaly of ☿		5	8	33	31
True Diſtance of ☉ *a* ⊖	99041	4.995814			
True Diſtance of ☿ *a* ☉	31594	4.499600			
True Diſtance of ☿ *a* ⊖	67447	4.828963			
Geocentric Long. ☉ and ☿ ℞		♏	11	4	49
Geocentric Latitude ☿ S. D.				15	30
Anomaly of Commutation		6	0	0	0
Inclination, or Heliocentric Latitude				33	6
Elongation to 6 Hours before the ☌				35	2
Difference of Latitude in 6 Hours				5	8
Angle of the viſible Way			8	20	10
The neareſt Approach of their Centers				15	20
Motion from the true ☌ to the Middle				2	13
True Latitude of ☿ at the Middle S. D.				15	10
Motion of half the viſible Way				4	47
Motion of half Duration				4	44
Difference of Latitude, between Middle, Beginning and End					41
Lat. ☿ *a* ⊖ at Beginning S. D.				15	52
Lat. ☿ *a* ⊖ at End S. D.				14	28
Time from the ☌ to the Middle add				22	52
Time of half Duration ſub. and add				48	46
Arch of the ☉'s Perimeter at Beginning			80°	57	0
Arch of the ☉'s Perimeter at End			64	19	0
Apparent Semidiameter ☿ 4″ and of ☉				16	4

Hence, the apparent Time at *London* of the	D.	h.	′	″	
Central Ingreſs, 1776, *October* A	22	10	55	15	P.M.
True Conjunction		11	21	9	P.M.
Middle of the Eclipſe		11	41	1	P.M.
Central Egreſs, or End, B		12	32	47	P.M.
Total Duration		1	37	32	

The Type.



Anno 1782, on *Tueſday, November* 1ſt, in the Afternoon, *Mercury* paſſes over the Sun, and thereby cauſes a black Spot, but it cannot be ſeen at *London* by reaſon the Sun is ſet e'er ☿ ſeems to touch his Diſk, but in the *Weſt-Indies* it may be ſeen. It happeneth at *London* as followeth:

		D.	*h.*	'	''
Equal Time of true ☌, is 1782, *Nov.*		1	5	27	45
Equation of Time add				15	39
Apparent Time of the true ☌ at *London*		1	5	43	24
Mean Anomaly of	☉	4	13	33	25
	☿	5	14	49	42
True Diſtance of	☉ *a* ⊖ 98823	4.994857			
	☿ *a* ☉ 31174	4.493794			
	☿ *a* ⊖ 67649	4.830262			
Geocentric	Long. ☉ and ☿ ℞.	♏	20	27	17
	Latitude ☿ N. A.			15	52
Anomaly of Commutation		6	0	0	0
Inclination, or Heliocentric Latitude N. A.				34	18
Elongation to 6 Hours before ☌				35	28
Difference of Latitude to 6 Hours				5	8
Angle of the viſible Way			8	14	8
Neareſt Approach of their Centers				15	42
Motion from the Middle, to the true ☌				2	50
Latitude of ☿ at the Middle N. A.				15	32
Motion of half the viſible Way				3	33
Motion of half Duration				3	31

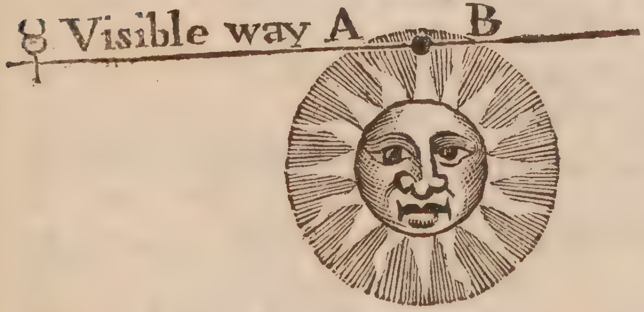
Difference

		′	″
Difference Latitude, between Middle, Begin. and End			30
Lat. ☿ *a* ⊖ at Beginning N. A.		15	2
Lat. ☿ *a* ⊖ at End N. A.		16	3
Time from the Middle, to true ☌ ſub.		22	50
Time of half Duration ſub. and add		35	41
Arch of the ⊙'s Perimeter at Beginning	69	1	0
Arch of the ⊙'s Perimeter at End	85	25	0
Apparent Semidiameter ☿ 4″, and of ⊙		16	6

Hence, the apparent Time at *London* of the

	D.	*h.*	′	″	
Central Ingreſs, 1782, *November* A	1	4	44	53	P.M.
Middle of the Eclipſe		5	20	34	
True Conjunction		5	43	24	
Central Egreſs, or End B		5	56	15	
Total Duration		1	11	22	

The Type.



Anno 1786, on *Wedneſday*, *April* the 22d, Aſtronomical Time, or on *Thurſday* Morning, if the Air be clear; at *London*, *Mercury* will be ſeen as a black Spot in the Sun, by ſuch as are fitted with proper Inſtruments, and capable to obſerve him; a Synopſis of the Calculation ſtands thus.

	D.	*h.*	′	″
Equal Time true ☌ at *London*, 1786, *April*	22	20	15	2
Equation of Time add			3	23

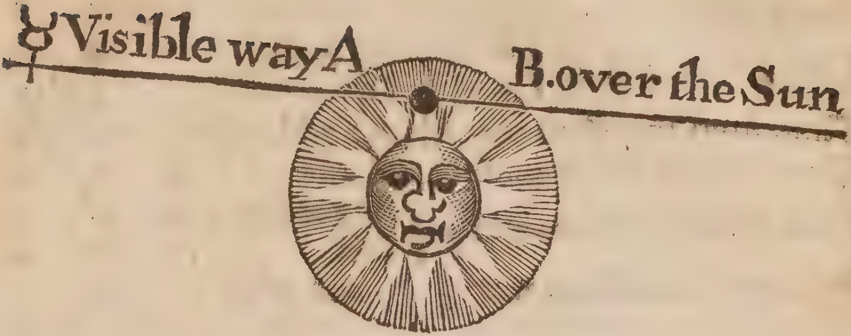
		D.	h.	'	
Apparent Time of the true ☌		22	20	18	25
Mean Anomaly of ☉		10	3	55	5
Mean Anomaly of ☿		19	16	25	47
True Diſtance of ☉ *a* ⊖	100987	5.004264			
True Diſtance of ☿ *a* ☉	45119	4.654358			
True Diſtance of ☿ *a* ⊖	55868	4.747163			
Geocentric Long. ☉ and ☿ ℞.		♉	13	56	58
Geocentric Latitude ☿ N. D.				10	40
Anomaly of Commutation		6	0	0	0
Inclination, or Heliocentric Latitude N. D.				13	13
Elongation to 6 Hours before ☌				23	32
Difference of Latitude to 6 Hours				4	14
Angle of the viſible Way over ☉			10°	11	50
Neareſt Approach of their Centers				10	30
Motion from the true ☌, to the Middle				1	50
True Latitude of ☿ at the Middle N. D.				10	20
Motion of half the viſible Way				11	45
Motion of half Duration				11	34
Difference of Latitude, between Middle, Beginning and End				2	5
True Lat. of ☿ *a* ⊖ at Beginning				12	25
True Lat. of ☿ *a* ⊖ at End				8	15
Time from true ☌ to the Middle add				28	26
Time of half Duration ſub. and add			2	57	7
Arch of the ☉'s Perimeter at Beginning			51	55	0
Arch of the ☉'s Perimeter at End			31	32	0
Apparent Semidiameter ☿ 6″, and of ☉				15	46

Hence, the apparent Time at *London* of the

	D.	h.	'	"	
Central Ingreſs, 1786, *April* A	22	17	49	44	P.M.
True Conjunction		20	18	25	
Middle of the Eclipſe		20	46	51	
Central Egreſs, or End B		23	43	58	
Total Duration		5	54	14	

The

The Type.



Anno 1789, on *Thurſday*, the 25th Day of *October*, in the Afternoon, if the Air is clear, at *London*, *Mercury* will be ſeen in the Sun, by ſuch as are fitted with a good Teleſcope for that Purpoſe; the Sun will ſet with *Mercury* upon his Disk: a Synopſis of the Calculation follows.

	D.	h.	'	"
Equal Time of the true ☌ 1789, *Oct.*	25	5	6	0
Equation of Time add			16	18
Apparent Time true ☌ at *London*	25	5	22	18
Mean Anomaly of ☉	4	6	50	54
Mean Anomaly of ☿	5	10	13	6
True Diſtance of ☉ *a* ⊖ 98981	4.995552			
True Diſtance of ☿ *a* ☉ 31471	4.497913			
True Diſtance of ☿ *a* ⊖ 67510	4.829368			
Geocentric Long. ☉ and ☿ ℞	♏	13	41	25
Geocentric Latitude ☿ S. D.			7	12
Anomaly of Commutation	6	0	0	0
Inclination, or Heliocentric Latitude S. D.			15	27
Elongation to 6 Hours before the ☌			35	8
Difference of Latitude to 6 Hours			5	8
Angle of the viſible Way over ☉		8°	18	46
Neareſt Approach of their Centers			7	7
Motion from the true ☌ to the Middle			1	2
True Latitude of ☿ at the Middle S. D.			7	3
Motion of half the viſible Way			14	25
Motion of half Duration			14	16

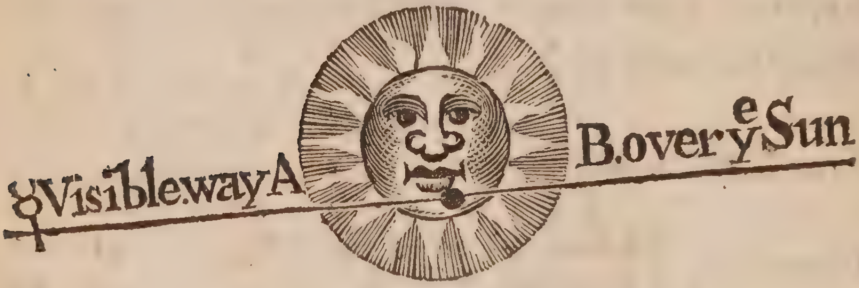
Difference

		′	″
Difference Latitude between Middle, Beg. and End		2	5
Lat. ☿ ſeen *a* ⊖ at Beginning S. D.		9	8
Lat. ☿ ſeen *a* ⊖ at End S. D.		4	58
Time from the ☌ to the Middle add		10	19
Time of half Duration ſub. and add	2	26	12
Arch of the ☉'s Perimeter at Beginning	34	36	0
Arch of the ☉'s Perimeter at End	17	58	0
Apparent Semidiameter ☿ 4″, and of ☉		16	5

Hence, the apparent Time at *London* of the

		D.	*h.*	′	″	
Central Ingreſs, 1789, *October*	A	25	3	6	25	P.M.
True Conjunction			5	22	18	P.M.
Middle of the Eclipſe			5	32	37	P.M.
Central Egreſs, or End,	B		7	58	49	P.M.
Total Duration			4	52	24	

The Type.



It may here be thought ſomething ſtrange to thoſe unskilled in Aſtronomy, that in the Tranſit of ☿ over the Sun, in the Year 1786, his Latitude was 10′ 40″, and here but 7′ 12″; by which, in this the Chord of the Sun made by the Line of ☿'s viſible Way is greater, than in the other Tranſit, and yet the Duration of the Paſſage over the Sun, is leſs here than in that by one Hour, 1′ 50″. The Reaſon is, in this, he is near his Perihelion, and in the other, near his Aphelion, as may be ſeen by his mean Anomaly in each Tranſit; conſequently, in the other he moves Slow, but in this Faſt.

Anno 1799, on *Tueſday*, *April* the 26th, in the Afternoon, at *London*, if Clouds interpoſe not; I deſire the induſtrious Aſtronomer to prepare his Teleſcope, and obſerve the long Tranſit of ☿ over the Sun, when he will continue more than ſeven Hours upon the Sun's Diſk, as you may the better perceive by what follows.

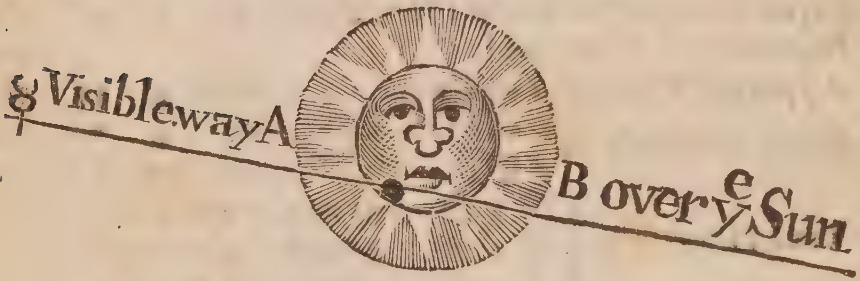
A Synopſis of the Calculation of this Tranſit.

		D.	*h.*	′	″
Equal Time of the true ☌ 1729, *April*		26	4	48	18
Equation of Time add				3	40
Apparent Time at *London*		26	4	51	58
Mean Anomaly of ☉		10	6	54	15
Mean Anomaly of ☿		10	20	34	1
True Diſtance of ☉ *a* ⊖	101059	5.004547			
True Diſtance of ☿ *a* ☉	45398	4.657036			
True Diſtance of ☿ *a* ⊖	55661	4.745551			
Geocentric Long. ☉ and ☿ ℞		♉	17	2	53
Geocentric Latitude ☿ S. A.				6	32
Anomaly of Commutation		6	0	0	0
Inclination, or Heliocentric Latitude S. A.				8	0
Elongation to 6 Hours before the ☌				23	32
Difference of Latitude to 6 Hours				4	16
Angle of the viſible Way over ☉			10°	20	53
Neareſt Approach of their Centers				6	25
Motion from the Middle, to the true ☌				1	9
True Latitude of ☿ at the Middle S. A.				6	19
Motion of half the viſible Way				14	22
Motion of half Duration				14	8
Difference Latitude, between Middle, Beginning and End				2	34
☿ true Lat. ſeen *a* ⊖ at Beginning S. A.				3	45
☿ true Lat. ſeen *a* ⊖ at End S. A.				8	53
Time from the true ☌ to the Middle ſub.				17	43
Time of half Duration ſub. and add			3	38	0
Arch of the ☉'s Perimeter at Beginning			13	48	0
Arch of the ☉'s Perimeter at End			34	22	0
Apparent Semidiameter ☿ 6″, and of ☉				15	45

Hence,

			D.	h.	′	″	
Hence, the apparent Time at *London* of the	Central Ingreſs, 1799, *April*	A	26	0	56	15	P.M.
	Middle			4	34	15	
	True Conjunction			4	51	58	
	Central Egreſs, or End	B		8	12	15	
	Total Duration			7	16	0	

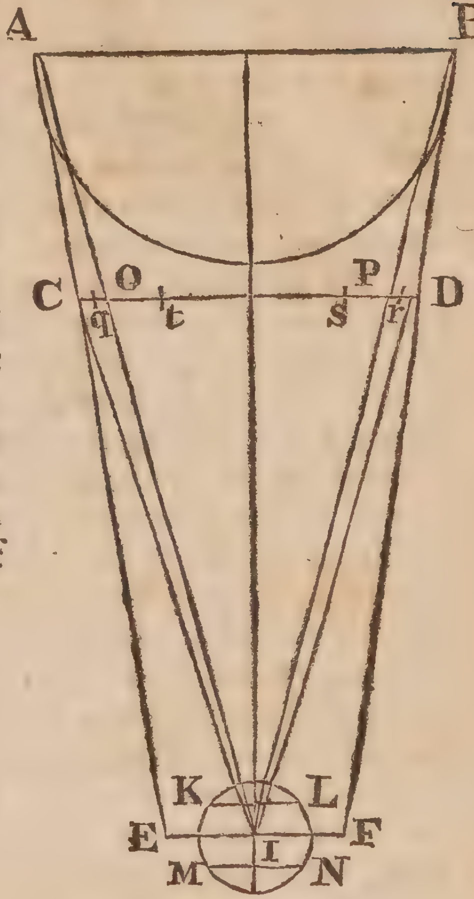
The Type.



April 26, 1799, Sun's Declination is 16° 58′ North, and his Aſcen. Difference is 22° 35′, which in time is 1*h* 30′ 20″ + 6*h* = 7*h* 30′ 20″, the true time of Sun's ſetting that Night at *London*; by which I prove the Sun ſets 41′ 55″ before *Mercury* is got off his Disk, or the central end of the Tranſit. And here I have given you thirteen Tranſits of *Mercury* over the Sun, and two of *Venus* in this preſent Century; which I hope will be very acceptable to all the Legitimate Sons of *Urania*, Gentlemen and others, who I hope will obſerve the ſame as often as Opportunity will permit.

To conclude theſe Tranſits of *Venus* and *Mercury* over the Sun, I ſhall add ſome Uſe that Aſtronomers make of them in finding the Sun's Horizontal Parallax; and, becauſe I would be as Conciſe as poſſible, but withal plain, I ſhall follow the Steps of Dr. *Halley* and Mr. *Whiſton*, and exemplify it in the Tranſit of *Mercury*, which will happen *October* 31ſt, 1736; which Calculation I have given you in my Syſtem, Page 425, *&c.*

In this Scheme, let A B be the Sun's Diameter, =31′ 40″, CD the viſible Way of *Mercury* over the Sun, whoſe Duration is 3*h* 1′ 52″; E F the Earth's Diameter, =7969.16 *Engliſh* Miles. Let K L N M be the Parallel of *London*, in which Latitude we are to find how many Miles make one Degree of Longitude thus:



As Radius	90	0′	10.000000
To the Miles in one Degree under the Equator	69.5		2.841985
So CS. Latitude	51	32	9.793832
To Miles in one Degree in that Parallel	43.23		2.635817

By this, I find that 43.23 Miles (true Meaſure) is one Degree of Longitude in the Parallel of *London*, whoſe Radius is 2476.89 Miles thus found.

Miles in one Degree 43.23
360
259380
12969
If 3.14159 : 1 :: 15562.8000000 (4953.79 Diameter.
...... 2476.895 Radius.

Let K L and M N be Chords, each of 3*h* 1′ 52″, the Duration of the Tranſit, which reduced into Degrees of the Equator, are 45° 28′ = 1965″.52 Miles. Now, from this Diagram, 'tis plain, that if there were two Spectators at E and F, without any diurnal Motion, they would have the ſame Angle for the Sun's Diameter ſeen to each of them: and to a Spectator, to one at the Earth's Center A I B = 31′ 40″ = 1900″, and the ſame Duration of the Tranſit from O to P = 3*h* 1′ 52″ = 10912″ of Time; but ſince the Spectator at M to the Weſt of *London*, after he has ſeen the Ingreſs at *q*, during the Time of the Tranſit, will be carried to N, by the Rotation of the Earth, and there will ſee the Egreſs at *r*; and he, at L, under the ſame Meridian, in the Eaſt, that ſaw the Egreſs at *r*, will be thereby arrived in contrary Direction to K, to ſee the Egreſs at *s*. Here will be a double Parallax, anſwerable to the Time and Angle of the Tranſit, along *q t* and *r s*; the one in Exceſs, the other in Defect, and both the very ſame, as if a ſingle Spectator had ſeen the Ingreſs when he was at E, at the Point C; and the other when he was at F, at the Point D; as compared with a Spectator that continued in the Earth's Center at I, all that time. In this Example then, the half Sum of their two Durations, and Angles to be as before 10912″, and the Sun's Diameter 1900″ for angular Meaſure; and let us ſuppoſe their Difference 2 C O = 4′ = 240″ of Time. Now ſay, as the Time of the Tranſit in Seconds, is to the Sum of the ſuppoſed Differences of the Spectators obſerved: ſo is the Sun's Apparent Diameter, to double the Difference of the two Obſervers.

OPERATION.

As 10912″ : 240″ : : 1900″ : 41″ = 2 C I O, whoſe half is 20″ = C I O = P I D; which, with the Angle C A O, bearing the ſame Proportion to this, that C A, the Diſtance of *Mercury* from the Sun 31197, bears to C I, the Diſtance of *Mercury* from the Earth 67677 = ∠ E C I.

As

☿ *a* ⊙   ☿ *ab* ⊖
As 31197 : 20″ : : 67677 : 43″, which is the Angle of the Parallax of *Mercury*; for ſo much doth the Diameter of the Earth appear to an Eye placed in *Mercury*, or, as being ſubtended by 1965.52 Miles. But this muſt now be increaſed as the Earth's Semidiameter 3984.58 is to 1965.52, and then we ſhall have *Mercury*'s true Parallax at that time, thus.

⊖ Miles Miles
As 3984.58 : 1965.52 : : 43″ : 21″, ☿'s true Parallax. Now the Sun's Horizontal Parallax is in a reciprocal Proportion to the Diſtance of Sun and *Mercury* from the Earth, thus.

☿ *ab* ⊖   ⊙ *ab* ⊖
As 67677 : 21″ : : 98374 : 15″ *ferè*. Here comes out 15″ for the Sun's Horizontal Parallax, which is 5″ more than I have it in my Syſtem; the Reaſon is, that in this Work, above the Angle C I O = P I D, is ſuppoſed to be 2′, and was not actually obſerved. But I doubt not if the Times of the Tranſit be carefully obſerved, and that Angle truely aſcertained, (which I ſuppoſe will be found ſmaller than what is here eſtimated) that then the Sun's Horizontal Parallax will be found nearer 10″ than 15, as is now retained by all our Modern Aſtronomers.

The Tranſits of *Venus* over the Sun are much fitter for this purpoſe, than thoſe of *Mercury*, by reaſon *Venus* is nearer to our Earth, and conſequently her Parallax is more than that of *Mercury*; the Angles E C I = F D I will be increaſed in a reciprocal Ratio of the Diſtance from the Earth.

I have told you in the Beginning of theſe Tranſits, that I have deduced them from *Aſtronomia Carolina*; this is therefore to inform my Reader, that thoſe Numbers are now very defective in the Places of all the Planets, as any one may find, if they will take the pains to compare them with my Syſtem, and with the Obſervations of the preſent Age. As for Inſtance, the Tranſit of ☿, *October* 29th, 1723, was obſerved at *London* to touch the Sun's Perimeter at 20′ before

3 in the Afternoon. Alſo the Equal Time of the true Conjunction of the Sun and *Venus* 1761, is *May* 25*d* 17*h* 54′ 8″ by my Syſtem, and the apparent Time at 55′ 59″ paſt 5 in the Morning, on the 26th Day; Dr. *Halley* has it 25*d* 17*h* 55′, in ♊ 15° 37′; *Street*'s Numbers give it *May* 26th Day, at 59′ 7″ paſt 10 *Manè*, in ♊ 15° 47′; which great Difference in Time and Place, is not to be reconciled by any that are Lovers of Aſtronomy.

A Reply to Tycho Wing, *in* Coley's Almanack, *for the Years* 1730, *and* 1731, *by way of Reprimand.*

THIS young Calculator no ſooner appears upon the publick Stage, but he falls foul upon two of our annual Writers, and ſays that they differ in the Place of ♀ 20′ from each other, in the Year 1728, in the Month of *April*; which Aſſertion of his is Falſe, as may be ſeen by the under-written. The Place of ♀ *April* 3d, 1728, according

to	*Parker*	♓	20°	45′	Diff. 19′
	Weaver	♓	20	26	
	my Tables	♓	20	29	58, with Lat. 1° 21′

45″ S. A. He tells the World that he has taken the Planets places from my Tables, which he finds agree with *Flamſtead*'s Obſervations; but my Lunar Motions, he ſays, are ſo exceeding wide from Truth, as are alſo *Bulialdus* and *Street*, that we make the ☽ approach the Earth in the Quadratures, whereas ſhe really removes from it; which, he ſays, obliged him to go through the Trouble and Pains of actually compoſing Tables upon Sir *Iſaac Newton*'s Theory. Now, as to the firſt of theſe, I challenge him to prove by a Geometrical Demonſtration, that the ☽ always in the Quadratures approacheth to the Earth; Secondly, I beg that he will (the next Opportunity in *Coley's* Almanack) oblige the World with the Calculation at large of the ☽'s Place to any Day at Noon; and, Thirdly, I will here prove who came neareſt to the Time of the ☽'s Eclipſe, *Jan.* 23d, 1730, when I obſerved it in *London*, in Company with ſeveral reputable Gentlemen, and choice of good Inſtruments, to begin at 50′ paſt 2 in the Morning, and Dig. 5° ½. By *Scientia Stellarum*, at 2*h* 38′ Dig. 2° 53′. By *Weaver*'s Almanack, at 2*h* 41′ Dig. 3° 17′. By *Ladies Diary*, from *A. Carol: London*, at 3*h* 15′ Dig. 2° 39′. By *Tycho Wing*, (which he ſays is from his New Theory) at 2*h* 31′ Dig. 3° 6′. By my Syſtem, at 2*h* 56′ Dig. 3° 33′. Here *Tycho*'s famous Theory fails him 18′ 37″; now, if this be to be depended on or not, I leave the Reader to judge. Laſtly, in the ſaid Almanack, for 1731, *Tycho* makes mention of Mr. *Wright*'s Correction of Sir *Iſaac*'s Theory of the Moon, where he vindicates the Errors laid down by the ſaid Mr. *Wright*, in the Moon's Mean Motion, for the Years 1681, and 1701, as alſo the Excentricities; and to prove the Certainty of this Correction, he there produces ſix of Mr. *Flamſtead*'s Obſervations, as a Touch-ſtone to try thoſe Errors by; but to let the World ſee how much he is miſtaken, I ſhall here in the room of his, inſert the Genuine Obſervations as they are in Mr. *Flamſtead*'s *Hiſtoria Cœleſtis*, taken at *Greenwich*, Lat. 51° 28′ 30″ North.

Apparent Time						Diſt. *a* Vert. Cor.			
						°	′	″	
1691	*Sept.*	20	7	21	26	76	30	55	of the ☽'s upper Limb.
1691	*Dec.*	18	6	27	0	41	14	40	
1691	*Dec.*	19	7	10	36	35	56	10	
1692	*Mar.*	18	8	54	48	36	58	5	
1698	*June*	16	14	46	33	63	39	10	
1714	*Sept.*	10	10	17	33	58	16	50	

He that is able and willing to try theſe Obſervations, will find the Moon's Longitude to differ much from what *Tycho Wing* has inſerted in *Coley*'s Almanack for the Year 1731. And ſo I bid *Tycho* farewell till the next Opportunity.

Of the Conjunctions of Saturn *and* Jupiter.

I Having finiſhed my 35 Years Calculation of the Eclipſes of the Luminaries, with the Tranſits of *Venus* and *Mercury* for this Century; I ſhall in the next Place give my Reader an account of the ſeveral Conjunctions of the two ſuperior Planets, *Saturn* and *Jupiter*, through the fiery Trigon; which will be 140 Years e'er they finiſh that Triplicity. And the firſt time of their meeting in *Aries* (ſince the Year 968) was on *Monday*, the 11th Day of *May*, at 15 h. 2 min. P. M. 1702. They were then Evening Stars, and the Longitude of them was *Aries* 6 deg. 42 min. Latitude of *Saturn*, 2 deg. 14 min. South Aſcending, Latitude of *Jupiter* was 1 deg. 13 min. South Aſcending; *Jupiter* was elevated above *Saturn* 1 deg. 1 min. *Venus*, *Mercury* and *Moon*, are very near them.

The next time of their Meeting, will be on *Tueſday*, the 27th Day of *December*, *Anno* 1722; a particular Account of which you will meet with in Page 28. of the Book; to which I refer the inquiſitive Reader, for further Satisfaction.

The third time of their Meeting in this Century, is on *Monday*, the 23d Day of *Auguſt*, 20 min. paſt 10 at Night, *Anno* 1742, in 27 deg. 55 min. of *Leo*, *Saturn* has then 1 d. 17 m. Lat. North Aſcending, and *Jupiter*'s Latitude is 52 min. North Aſcending. Here *Saturn* will be elevated above *Jupiter*, (at the time of this Conjunction) 25 min. They are then Morning Stars, and under the *Sun*'s Beams.

The fourth Conjunction of *Saturn* and *Jupiter*, will be on *Friday*, the 8th Day of *March*, at 50 min. paſt 5 a Clock in the Morning, they meet in 12 deg. 19 min. of *Aries*, *Saturn* has then 2 deg. 15 min. South Latitude Aſcending, and *Jupiter*'s Latitude is 1 deg. 1 min. South Deſcending; and here *Jupiter* is elevated

vated 1 deg. 7 min. above *Saturn*. They are now Evening-Stars, 13 deg. 40 min. diſtant from the *Sun*, ſo cannot be ſeen. *Anno Dom.* 1762.

The fifth Conjunction of *Saturn* and *Jupiter*, will be in the Year 1782, on *Thurſday*, the 27th Day of *October*, 15 min. paſt 5 a-clock in the Morning; they meet in 28 deg. 22 min. *Sagittarius*; *Saturn* has then 48 min. North Latitude Deſcending, and *Jupiter* has 2 min. North Latitude Deſcending. Here *Saturn* will be elevated 46 min. above *Jupiter*; they are now Evening-Stars, 43 deg. 27 min. diſtant from the *Sun*; ſo that in the Evening, after *Sun*-ſet, they may be ſeen South-Weſt, pleaſant to behold.

The ſixth Conjunction of *Saturn* and *Jupiter*, is in the Year 1802, in the Earthly Triplicity; it happeneth on *Wedneſday*, *July* 9, at 18 min. paſt 11 a-clock at Night, in 5 deg. 48 min. of *Virgo*, the Latitude of *Saturn* is 1 deg. 42 min. North Aſcending; and of *Jupiter* 1 deg. 5 min. North Aſcending. At the time of this Conjunction, *Saturn* will be elevated, 37 min. above *Jupiter*; they are now Evening-Stars, diſtant from the *Sun* 37 deg. 29 min. and conſequently may be ſeen Weſtward after *Sun*-ſet.

The ſeventh Conjunction of *Saturn* and *Jupiter*, will be in the Year 1821, and in the fiery *Trigon* again; this happeneth on *Monday*, *June* 6. at 8 in the Morning, in 24 deg. 9 min. of *Aries*; *Saturn*'s Latitude is then 2 deg. 24 min. South Aſcending, and *Jupiter*'s Latitude is 1 deg. 15 min. South Deſcending; they are both direct and ſwift in Motion. Here *Jupiter* is elevated above *Saturn* 1 deg. 9 min. they are now Morning-Stars, diſtant from the *Sun* 62 deg. 14 min. Riſing before him, pleaſant to behold.

Now I having given you a particular Account of the Conjunctions of the two Superiors for 140 Years to come, which will be very acceptable to all the Sons of *Urania*; where you are to obſerve by the way, that ♈, ♌, ♐, make the fiery Trigon; ♉, ♍, ♑, make the Earthly Triplicity; ♊, ♎, ♒, make the Airy Triplicity; ♋, ♏, ♓, make the Watery Trigon or Triplicity.

Now as the Obſervations drawn from theſe Calculations, ſerveth to admire the ſecret Will and Wiſdom of God, ſo likewiſe doth it very well ſerve to ſilence ſuch ignorant Idiots as ſhall gainſay or condemn theſe moſt heavenly and delectable Studies.

Great is thy Wiſdom, O Lord! thou that art the God of Order, haſt made all things ſo to be and continue, let the Ignorant ſee thy wonderful Works, and be aſtoniſhed; there is nothing that thou haſt made in vain: therefore, keep me, O Lord, from being ſo vain as to condemn what I am ignorant of, and make me, I beſeech thee, whilſt I contemplate thee in thy Works, I may not forget thee in thy Attributes; but that I may thereby be drawn nearer to thee: And as I endeavour to know the Creature, I may inceſſantly ſtrive to enjoy the Creator, in whom reſteth ſole Felicity and Content.

Exitus acta probat, finis non pugna coronat.

FINIS.

ARTS and Sciences, Mathematical; Profeſſed and Taught by the Author hereof, at the *Hand* and *Pen*, in *Cock-lane*, near *Shore-Ditch*, *London*: *viz.* Vulgar and Decimal Arithmetick, Trigonometry, Aſtronomy, Surveying, Gauging, Dialling and Navigation: Who alſo performs all Sorts of Meaſuring, either for Maſter or Workman, with Care and Expedition, at Reaſonable Rates.